



HOW WELL-FORMULATED
PERFUMES CONTAINING ESSENTIAL
OILS PROVIDE BOTH SENSORIAL AND
FUNCTIONAL BENEFITS TO HAIR AND
SCALP CARE

LOÏC BLEUEZ
DIRECTOR INNOVATION
HEAD OF PARIS SOA R&D CENTER


SENSIENT®
FRAGRANCES

- Brief Sensient overview
- Definitions
- Essential Oils Screening + Perfumes
- Applications into shampoo and other hair care products
- Conclusions

Sensient Technologies is a leading global developer, manufacturer and marketer of high-quality:

- Colors
- Flavors
- Fragrances
 - *Essential Oils*
 - *Aroma chemicals*
 - *Fragrance compounds*



SENSIENT FRAGRANCES S.A.

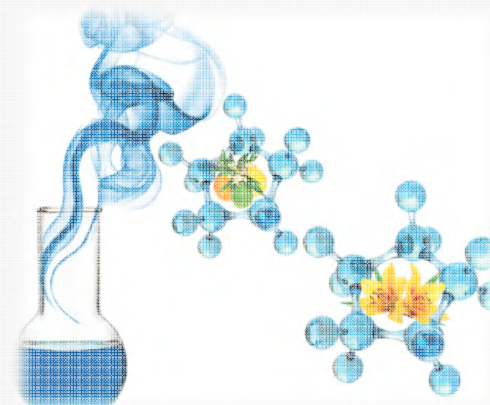
GLOBAL PRODUCTION & DISTRIBUTION OF 3 PRODUCT RANGES



FRAGRANCES



ESSENTIAL OILS



AROMA CHEMICALS

Vertical integration through production of Essential Oils & Aroma Chemicals ensures quality and supply for our fragrance production

ESSENTIAL OILS

SENSIENT HAS A LONG HERITAGE (DESTILACIONES GARCÍA DE LA FUENTE)



We offer over a 100 years of proud heritage, combining nature and science, guaranteeing year over year supply of the best Spanish Oils, specially Rosemary, Thyme, Aniseed and Lavandin.



- Origins go back to the beginning of the 20th century. (DGF **founded in 1912**). Pioneers with over 100 years of experience in essential oils.
- Main line at that time was production/distillation of essential oils from local aromatic plants.
- High quality essential oils thanks to the ideal geographical and climate conditions in Southern Spain (proximity of aromatic plants)
- Range of activities have expanded to aroma chemicals, specialties and perfumery compounds.

PRODUCTION CAPABILITIES. ESSENTIAL OILS AREA

- **Pure Essential Oils**
 - Steam distillation by Sensient (eg Ambrette seed oil)
 - Steam distillation by farmers and agricultural cooperatives
 - Traded essential oils (purchased and resale)
- **Compounded Essential Oils** (tailor made **ONLY** at Sensient Granada)
 - blending of pure essential oils with natural and synthetic products
 - cost effective, comply with requirements and legislation (FG, FCC, USP, etc)
 - better availability (not so limited as pure essential oils)



ESSENTIAL OILS

SENSIENT ESSENTIAL OILS COMPENDIUM

- The compendium will contain a total of 211 products, listed under 3 different tabs
- 1st tab: overview of all the pure oils in alphabetic order (184 items)
- 2nd tab: overview of all the organic oils in alphabetic order (27 items)
- 3rd tab: overview per olfactory family (we have defined 11 different olfactory families) and with reference to page number

CYPRESS OIL SPAIN

Cupressus sempervirens (Cupressaceae)



WINDS (BRAC/AMU) | CONIFEROUS (FLORAL) | MOIST
TERRACONIC (GREEN) | TERRESTRIAL (ROSEWOOD) | WOODY

CAS NUMBER	8013-86-3
OLFACTIVE DESCRIPTION	Green Leafy Resinous
ORIGIN	Spain
PROCESSED PART OF PLANT	
PROCESS	Steam distillation of <i>Cupressus sempervirens</i> (Cupressaceae)
ASPECT	
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C)
MAIN COMPONENTS	
CROP SEASON	Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

CAS NUMBER 8013-86-3	CAS_EINECS 84696-07-1	FLASHPOINT 34°C
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SENSIENT FRAGRANCES S.A.

PURE ESSENTIAL OILS PRODUCT LIST & ORGANIC ESSENTIAL OILS LIST



LIST OF SENSIENT PURE ESSENTIAL OILS

Page		Page	
001	AMBRETTESEED OIL	039	CLOVE LEAF OIL
002	AMYRIS OIL		80% EUGENOL DARK
003	ANGELICA ROOT OIL	040	CLOVE LEAF OIL
004	ANISEED OIL PIMPINELLA		85% EUGENOL LIGHT RECTIFIED
005	ARVEN OIL (SWISS PINE)	041	CLOVE STEM OIL
006	BASIL OIL (LINALOOL TYPE)	042	COFFEE OIL CO ₂
007	BASIL OIL (METHYLCHAVICOL TYPE)	043	COGNAC OIL LIGHT
008	BAY OIL	044	CORIANDER OIL
009	BERGAMOT OIL REGGIO	045	CORN MINT OIL
010	BERGAMOT OIL REGGIO	046	CORN MINT OIL
	BERGAPTEN-FREE	047	CORN MINT OIL RECTIFIED
011	BLOOD ORANGE OIL	048	CUMINSEED OIL
012	BLOOD ORANGE OIL 10-FOLD	049	CYPRESS OIL
013	CAJAPUT OIL	050	CYPRESS OIL
014	CAMPHOR OIL LIGHT	051	DAVANA OIL
	30% CINEOL (DE-CAMPHORIZED)	052	DILLWEED OIL
015	CANANGA OIL	053	DILLWEED OIL
016	CARAWAY OIL RECTIFIED	054	ELEMI OIL
017	CARDAMOM OIL	055	EUCALYPTUS CITRIODORA OIL
018	CARDAMOM OIL		75% CITRONELLAL
019	CARDAMOM OIL CO ₂	056	EUCALYPTUS OIL 80/85% EUCALYPTOL
020	CARROT SEED OIL	057	EUCALYPTUS OIL 80/85% EUCALYPTOL
021	CASSIA OIL	058	EUCALYPTUS OIL 80/85% EUCALYPTOL
022	CEDAR LEAF OIL	059	FENNEL OIL BITTER
023	CEDARWOOD OIL ATLAS	060	FENNEL OIL SWEET
024	CEDARWOOD OIL TEXAS	061	FENNEL OIL SWEET
	22% CEDROL	062	FIR NEEDLE OIL SIBERIA
025	CEDARWOOD OIL VIRGINIA		30% BORNYLACETATE
	25% CEDROL	063	GARLIC OIL
026	CELERY SEED OIL	064	GERANIUM OIL
027	CHAMOMILE OIL	065	GERANIUM OIL
028	CHAMOMILE OIL	066	GERANIUM OIL BOURBON
029	CHAMOMILE OIL BLUE	067	GINGER OIL
030	CINNAMON BARK OIL CO ₂	068	GINGER OIL
031	CINNAMON BARK OIL SRI LANKA	069	GINGER OIL SELECT CO ₂
	30/35% CINNAMIC ALDEHYDE	070	GRAPEFRUIT OIL PINK FRUIT
032	CINNAMON BARK OIL SRI LANKA	071	GRAPEFRUIT OIL WHITE FRUIT
	40/46% CINNAMIC ALDEHYDE	072	GRAPEFRUIT OIL WHITE FRUIT
033	CINNAMON BARK OIL SRI LANKA	073	GUAIAACWOOD OIL
	60/65% CINNAMIC ALDEHYDE	074	HELICHRYSUM OIL
034	CINNAMON LEAF OIL LIGHT	075	HOLEAF OIL 85% LINALOOL
035	CISTUS OIL	076	HORSERADISH OIL
036	CITRONELLA OIL (JAVA TYPE)	077	JASMIN ABSOLUE
037	CLARY SAGE OIL	078	JUNIPERBERRY OIL
038	CLOVE BUD OIL	079	JUNIPERBERRY OIL

LIST OF SENSIENT PURE ESSENTIAL OILS

Page		Page	
080	LAUREL LEAF OIL	124	PARSLEY LEAF OIL
081	LAVANDIN ABRIALIS OIL	125	PATCHOULI OIL
082	LAVANDIN GROSSO OIL	126	PATCHOULI OIL IRONFREE
083	LAVANDIN SUPER OIL	127	PEPPER OIL BLACK
084	LAVENDER OIL	128	PEPPER OIL BLACK
085	LAVENDER OIL	129	PEPPERMINT OIL
086	LAVENDER OIL	130	PEPPERMINT OIL MADRAS
	TRADITIONAL / FINE	131	PEPPERMINT OIL WILLAMETTE
087	LEMON OIL	132	PEPPERMINT OIL WILLAMETTE
088	LEMON OIL		RECTIFIED
089	LEMONGRASS OIL 75% CITRAL	133	PEPPERMINT OIL YAKIMA
090	LIME OIL	134	PETITGRAIN OIL
091	LIME OIL DISTILLED	135	PIMENTO BERRY OIL
092	LITSEA CUBEBA OIL 75% CITRAL	136	PIMENTO LEAF OIL
093	LOVAGE LEAF OIL	137	PINE NEEDLE OIL
094	LOVAGE ROOT OIL	138	QUENDEL OIL (THYME WILD)
095	MACE OIL	139	RAVENSARA OIL
096	MACE OIL	140	ROSE OIL
097	MANDARIN OIL RED	141	ROSEMARY OIL AFRICAN (CINEOL TYPE)
098	MANDARIN OIL RED	142	ROSEMARY OIL SPANISH (CAMPHOR TYPE)
099	MANDARIN OIL YELLOW	143	SAGE OIL 30% THUJONE
100	MANUKA OIL	144	SAGE OIL THUJONE FREE
101	MARJORAM OIL (SWEET)	145	SANDALWOOD OIL
102	MARJORAM OIL WILD	146	SANDALWOOD OIL
103	MOUNTAIN PINE OIL	147	SANDALWOOD OIL
104	MUSTARD OIL	148	SAVORY OIL
105	MYRRH OIL	149	SPEARMINT OIL 80% CARVONE
106	MYRTLE OIL	150	SPEARMINT OIL NATIVE FARWEST
107	NEROLI OIL	151	SPIKE LAVENDER OIL
108	NIAOULI OIL	152	STAR ANISE OIL 15/16* EX BADIANA
109	NUTMEG OIL	153	TANGERINE OIL
110	NUTMEG OIL	154	TARRAGON OIL
111	OLIBANUM OIL	155	TEA TREE OIL
112	OLIBANUM OIL	156	TEA TREE OIL WILD GROWN
113	ONION OIL	157	THUJA OIL
114	ORANGE OIL	158	THYME OIL
115	ORANGE OIL	159	THYME OIL LIGHT
116	ORANGE OIL 7-FOLD	160	THYME OIL RED
117	ORANGE OIL BITTER	161	VALERIAN OIL
118	ORANGE OIL MIDSEASON	162	VETIVER OIL
119	ORANGE OIL SWEET	163	VETIVER OIL
120	ORANGE OIL VALENCIA	164	WINTERGREEN OIL
121	ORIGANUM OIL	165	YLANG YLANG OIL I
122	ORIGANUM OIL 70% CARVACROL	166	YLANG YLANG OIL II
123	PALMAROSA OIL	167	YLANG YLANG OIL III

LIST OF SENSIENT ORGANIC ESSENTIAL OILS

Page	
168	BERGAMOT OIL REGGIO ORGANIC
169	BLOOD ORANGE OIL ORGANIC
170	CINNAMON LEAF OIL LIGHT ORGANIC
171	EUCALYPTUS OIL ORGANIC
172	FENNEL OIL SWEET ORGANIC
173	LAVANDIN GROSSO OIL ORGANIC
174	LAVENDER OIL ORGANIC
175	LAVENDER OIL ORGANIC
176	LEMON OIL ORGANIC
177	LEMON OIL ORGANIC
178	LEMONGRASS OIL ORGANIC
179	LIME OIL ORGANIC
180	LITSEA CUBEBA OIL ORGANIC
181	MANDARIN OIL RED ORGANIC
182	MARJORAM OIL ORGANIC
183	MINT OIL ORGANIC 70% MENTHOL
184	MYRTLE OIL ORGANIC
185	ORANGE OIL SWEET ORGANIC
186	ORIGANUM OIL ORGANIC
187	PALMAROSA OIL ORGANIC
188	PEPPERMINT OIL ORGANIC
189	ROSEMARY OIL ORGANIC
190	SAGE OIL 30% THUJONE ORGANIC
191	SAGE OIL THUJONE FREE ORGANIC
192	STAR ANISE OIL ORGANIC
193	TEA TREE OIL ORGANIC
194	THYME OIL RED ORGANIC
195	VETIVER OIL ORGANIC

1. DEFINITIONS



ESSENTIAL OIL

An essential oil is the volatile liquid found in a variety of plants, trees, shrubs, and citrus fruit rinds.

Essential oils are generally extracted by

- Distillation
- Expression
- Solvent extraction
- Cold pressing

⇒ Complex composition: These active compounds are so small that humans can easily absorb them through the skin, nasal passages, lungs, and digestive system.

Use

- Perfumes: soap, shampoo, skin care ...
- Pharmacology: antiseptic, diuretic...
- Aromatherapy: stress...

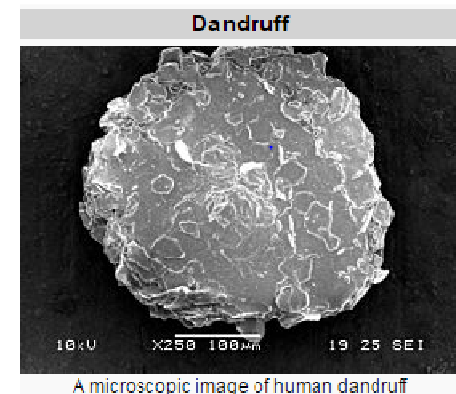
DANDRUFF

Dandruff has been shown to possibly be the result of three factors:

- Skin oil: sebum or sebaceous secretions
- Micro-organisms (specifically Malassezia yeasts)
- Individual susceptibility and allergy sensitivity

It seems that bacteria (*Propionibacterium* and *Staphylococcus*) are more important to dandruff formation than fungi. Bacteria presence is in turn influenced by water and sebum amount.

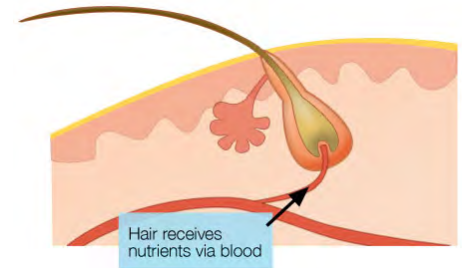
In other explanation, in presence of dandruff, the levels of *Malassezia* increase by 1.5 to 2 times its normal level. Penetration by Oleic Acid of the top layer of the epidermis, the stratum corneum, results in an inflammatory response in susceptible persons which disturbs homeostasis and results in erratic cleavage of stratum corneum cells.



HAIR STIMULATION

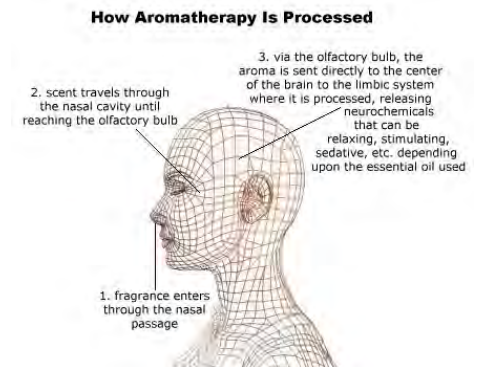
Every hair on a healthy scalp is connected to a blood vessel => receives nutrients and grows. However, hair loss sufferers have an extremely weak supply of blood to their hair follicles.

- massage
- heat



AROMATHERAPY

Practice of using volatile plant oils, including essential oils
=> "odour" receptors in the nose communicate with parts of the brain: stimulate and influence physical, emotional, and mental health



2. ESSENTIAL OILS

SCREENING



A screening of the 211 known essential oils was carried out using free patents and ncbi.nlm, to identify the top 8 essential oils with greatest benefits to hair and scalp care:

- Bergamot
- Eucalyptus
- Grapefruit
- Lavender
- Peppermint
- Rosemary
- Sage
- Tea Tree

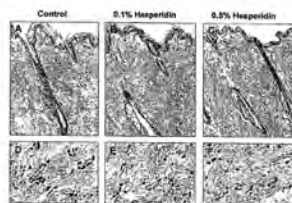
BERGAMOT ESSENTIAL OIL

COMPOSITION

- D Limonene 38%
- Linalyl Acetate 28%
- Linalol 11%
- Gamma Terpinene 7%
- Beta Pinene 5,7%
- Sabinene 1%
- Myrcene 1%
- Bergaptene

CLAIM

- **Antidandruff** :due to content of Flavanones. Hesperidin is a flavanone glycoside found in citrus fruits*



- **Stimulating Hair Growth** by increasing circulation in the hair **
- **Aromatherapy effect** by decreasing stress ***

PERFUME

Cosmo Lime
54.580.0660

with 0,1% Bergamot Essential Oil

Apple, Pear,
Plum, Green,
Bergamot

Liliac, Rose,
Lily Of the valley,
Freesia

Peach, Powdery, Woody

BERGAMOT OIL REGGIO
Citrus aurantium L. ssp bergamia




ALLIACEOUS | AMBER | BALSAMIC | CITRUS | CONIFEROUS | FLORAL | FRUIT | GOURMAND | GREEN | HERBAL AROMATIC | SPICY | WOODY

CAS NUMBER	89957-91-5
OLFACTIVE DESCRIPTION	Fresh Green Citrus Bergamot
ORIGIN OF PLANT	Italy
PROCESSED PART OF PLANT	Peels
PROCESS	Cold Press
ASPECT	Mobile liquid - Greenish yellow
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C).
MAIN COMPONENTS	Eugenol, chavicol, myrcene, d-limonene

CROP SEASON

Jan

Feb

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May

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Nov

Dec

ALTERNATIVE CAS 8007-75-8	EINECS 289-612-9	FLASHPOINT 56°C
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SEPTEMBER 2016




EUCALYPTUS ESSENTIAL OIL

COMPOSITION

- 1,8 Cineol 66%
- Alpha Pinene 14%
- D limonene 4%
- Globulol 3%
- Para Cymene 2%
- Beta Pinene

CLAIM

- **Antidandruff:** The presence of rich phenolic compounds like Thymol, 1,8-Cineole, Beta-Pinene and Alpha-Pinene present in the E. globules contribute to the bioactivity*

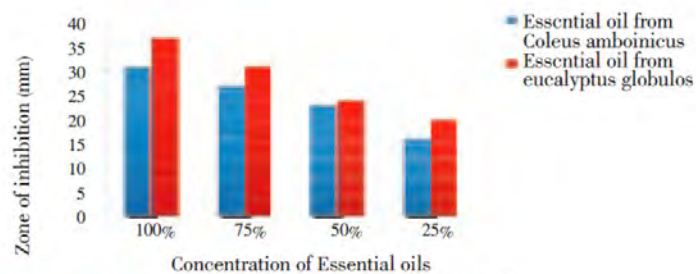
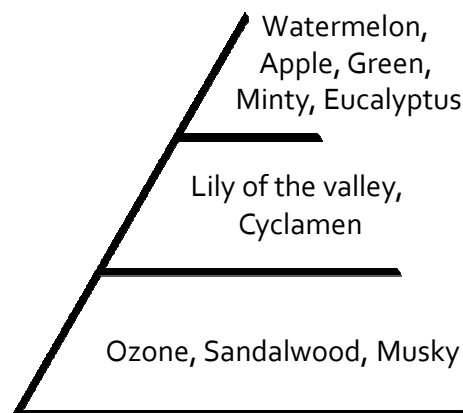


Figure 2. Antidandruff activity of essential oils.

PERFUME

Fresh Eden
54.680.0661

With 0,1% Eucalyptus
Essential Oil



EUCALYPTUS OIL
80/85% EUCALYPTOL
Eucalyptus globulus Labill.





ALLIUM | SALS | ANIS | CUMIN | CILANTRO | CITRUS | CORIANDRUM | FENICULUS | FLORAL | FRUIT | GINGER | LEMON | MINT | PEPPERMINT | PINEAPPLE | SAGE | SANDALWOOD | VANILLA | YLANG YLANG
 HERBAL AROMATIC | SPICY | WOODY

CAS NUMBER	84625-32-1
OLFACTIVE DESCRIPTION	Fresh Fruity Eucalyptus Ciniolic
ORIGIN OF PLANT	China
PROCESSED PART OF PLANT	Fresh or partially dried leaves and young twigs
PROCESS	Steam Distillation
ASPECT	Mobile liquid - Colorless to yellowish
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C).
MAIN COMPONENTS	1:8 Cineol, d-limonene, p-cymene, alpha-pinene

CROP SEASON

Jan

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ALTERNATIVE CAS 8000-48-4	EINECS 283-406-2	FLASHPOINT 50°C
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SEPTEMBER 2016

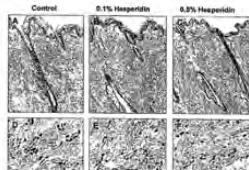
GRAPEFRUIT ESSENTIAL OIL

COMPOSITION

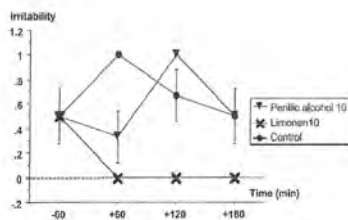
- D-limonene 85%
- Myrcene 1,4%
- Octanal 0,6%
- Dacanol 0,4%
- Nootkatone 0,1

CLAIM

- **Antidandruff:** due to content of Flavanones: hesperidin is a flavanone glycoside found in citrus fruits*



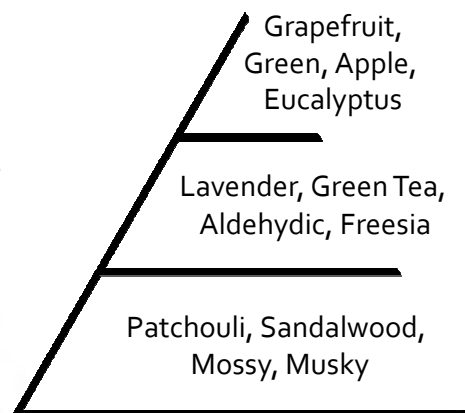
- **Aromatherapy Effect:** due to content of Monoterpenes (Limonene)**




PERFUME


Energy Pump
54.580.0382

With 0,1% Grapefruit Essential Oil



GRAPEFRUIT OIL PINK FRUIT
Citrus paradisi M.






ALLIACEOUS | AMBER | BALSAMIC | **CITRUS** | CONIFEROUS | FLORAL | FRUITY | GOURMAND | GREEN | HERBAL AROMATIC | SPICY | WOODY

CAS NUMBER	90045-43-5
OLFACTIVE DESCRIPTION	Citrus Grapefruit Orange
ORIGIN OF PLANT	South Africa
PROCESSED PART OF PLANT	Peels
PROCESS	Cold Press
ASPECT	Mobile liquid - Orange
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C).
MAIN COMPONENTS	d-Limonene, myrcene

CROP SEASON

JanFebMarAprMayJunJulAugSepOctNovDec

ALTERNATIVE CAS 8016-20-4	EINECS 289-904-6	FLASHPOINT 49°C
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SEPTEMBER 2016

<http://www.freepatentsonline.com/20070129428.pdf> **<http://www.freepatentsonline.com/20110028549.pdf>

LAVENDER ESSENTIAL OIL



COMPOSITION

- Linalyl Acetate 38%
- Linalool 30%
- Ocimene (mix) 4,5%
- Lavandulyl Acetate 4%
- Beta Caryophyllene 3%
- Terpinen-4-ol 3%
- 1,8 Cineole 1,5%
- 3-Octanone, Lavandulol, Borneol

CLAIM

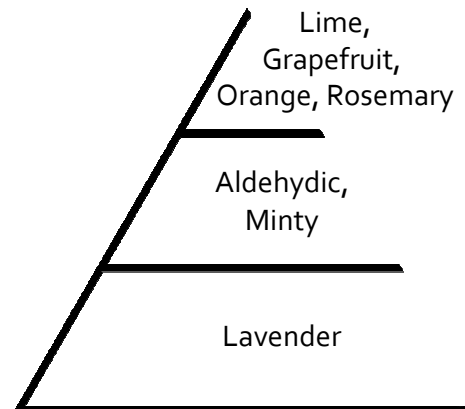
Stimulating Hair Circulation:
when a daily scalp massage is done with lavender => **New hair grow ***

Aromatherapy Effect:
-Decrease blood pressure**
-Minimize stress due to acetate linalyle and linalool ingredients***

PERFUME

Calm Moment
54.680.0658

With 0,1% Lavender Essential Oil



LAVENDER OIL
Lavandula angustifolia Mill.



ALLIPEENOL | PINEN | CALPHENOL | OCTENOL | COMPERENOL | FLOPALL | FRUITY | DOLIPMAAL | GREEN | HERBAL AROMATIC | SPICY | WOODY

CAS NUMBER	90063-37-9
OLFACTIVE DESCRIPTION	Aromatic Fresh Floral Rich
ORIGIN OF PLANT	France
PROCESSED PART OF PLANT	Flowering tops
PROCESS	Steam Distillation
ASPECT	Mobile liquid - Slightly yellowish
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C).
MAIN COMPONENTS	Linalyl acetate, linalool, ocimene

CROP SEASON

JanFebMarAprMayJunJulAugSepOctNovDec

ALTERNATIVE CAS 8000-28-0	EINECS 289-995-2	FLASHPOINT 71°C
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SEPTEMBER 2016



<http://www.freepatentsonline.com/20110028549.pdf>**www.ncbi.nlm.nih.gov/pubmed/21157172*<http://www.ncbi.nlm.nih.gov/pubmed/1817516>

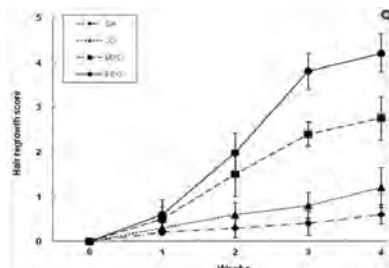
PEPPERMINT ESSENTIAL OIL

COMPOSITION

- Menthol 42%
- Menthone 20%
- Trans Sabinene Hydrate 6%
- 1,8 Cineol 5%
- Isomenthone 4%
- Neomenthol 4%
- Menthofuran 2%

CLAIM

- Stimulate hair circulation =>
Hair Grow*



Comparison of the hair growth effect in C57BL/6 mice. The back skins of the mice were shaved and test compounds were topically applied for 4 wks. The hair growth effect was calculated using scoring index: 0~19% (1), 20~39% (2), 40~59% (3), 60~79% (4), and 80~100% (5). Each point represents the mean ± SD of 5 mice. SA; saline, JO; jojoba oil, MXD; 3% minoxidil, PEO; 3% peppermint oil.

PERFUME

Iced Play
54.680.0663

With 0,1% Peppermint
Essential Oil



PEPPERMINT OIL
Mentha piperita L.




ALLIACETS | AMBER | BALSAMIC | CITRUS | CINNAMOY | FOLIARY | FRUIT | GOURMAND | GREEN | HERBAL AROMATIC | SPICY | WOODY

CAS NUMBER	84082-70-2
OLFACTIVE DESCRIPTION	Mint Mentolic Fresh
ORIGIN OF PLANT	India
PROCESSED PART OF PLANT	Flowering tops
PROCESS	Steam Distillation
ASPECT	Mobile liquid - Colorless to slightly brown
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C).
MAIN COMPONENTS	Menthol, menthyl acetate, menthofuran

CROP SEASON

Jan Feb Mar Apr **May** Jun Jul Aug Sep Oct Nov Dec

ALTERNATIVE CAS 8006-90-4	EINECS 282-015-4	FLASHPOINT 90°C
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SEPTEMBER 2016




ROSEMARY ESSENTIAL OIL

COMPOSITION

- 1,8 Cineole 22%
- Camphor 18%
- Alpha Pinene 18%
- Camphene 10%
- D limonene 5%
- Beta Pinene 4%
- Para Cymene 3%
- Borneol, Verbenone, Linalool, Myrcene

CLAIM

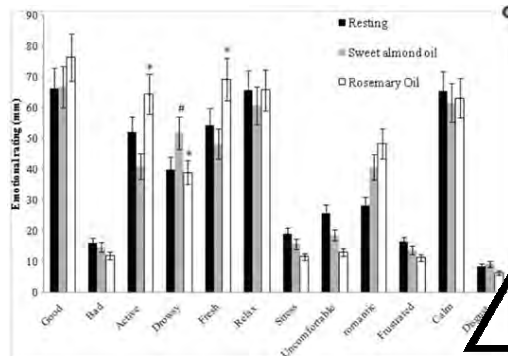
- **Antidandruff:** contains antibacterial and antifungal compounds (1,8 Cineole) which can treat the dandruff and restore balance to your scalp.

PERFUME

Perfect Vitality
54.680.0659

With 0,1% Rosemary Essential Oil

Lime,
Grapefruit,
Orange, Rosemary
Aldehydic, Minty
Lavender



ROSEMARY OIL SPANISH (CAMPHOR TYPE)
Rosmarinus officinalis L.

ALL | ACELIUS | AMBER | BALSAMIC | CITRAUS | EDIBLE | FERROUS | FIBRAL | FRUITY | GOURMAND | GREEN | HERBAL AROMATIC | SPICY | WARM

CAS NUMBER	84604-14-8
OLFACTIVE DESCRIPTION	Fresh Natural Camphoraceous Rosemary Like
ORIGIN OF PLANT	Spain
PROCESSED PART OF PLANT	Leafy branches
PROCESS	Steam Distillation
ASPECT	Mobile liquid - Slightly yellowish
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C).
MAIN COMPONENTS	Camphene, d-limonene, myrcene

CROP SEASON

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

ALTERNATIVE CAS 8000-25-7	EINECS 283-291-9	FLASHPOINT 44°C
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SEPTEMBER 2016

*<http://www.freepatentsonline.com/20110028549.pdf>**<http://www.ncbi.nlm.nih.gov/pubmed/23833718>

SAGE ESSENTIAL OIL

COMPOSITION

- Camphor 23%
- 1,8 Cineole 22%
- Alpha Pinene 7%
- Camphene 7%
- Sabinene 7%
- Beta Pinene 4,5%
- Viriflorol 3%, Alpha
Terpineol 3%, D
limonene 3%
- Borneol 2%

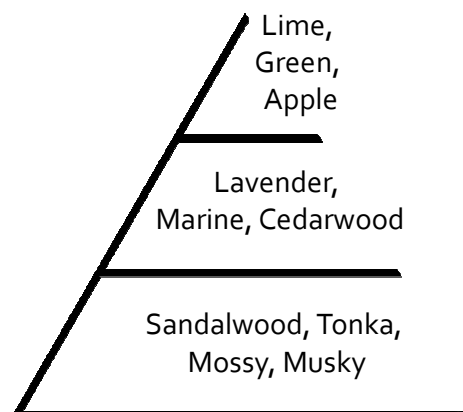
CLAIM

- **Aromatherapy Effect** :
Antidepressant-like effect of
Salvia sclarea is explained by
modulation of dopamine
activities in rats* **


PERFUME

Aromatic Firmin
54.680.0657

With 0,1% Sage
Essential Oil



SAGE OIL 30% THUJONE
Salvia officinalis L.




ALLIACEOUS | AMBER | BALSAMIC | CITRUS | COMIFEROUS | FLORAL | FRUITY | GOURMAND | GREEN | **HERBAL AROMATIC** | SPICY | WOODY

CAS NUMBER	84082-79-1
OLFACTIVE DESCRIPTION	Dry Herbal Sage Like
ORIGIN OF PLANT	Moldova
PROCESSED PART OF PLANT	Aerial parts
PROCESS	Steam Distillation
ASPECT	Mobile liquid · Colorless to yellowish
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C).
MAIN COMPONENTS	Thujones, camphor, 1:8 cineol

CROP SEASON

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

ALTERNATIVE CAS 8022-56-8	EINECS 282-025-9	FLASHPOINT 46°C
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SEPTEMBER 2015



TEA TREE ESSENTIAL OIL

COMPOSITION

- Terpineol 36%
- Gamma Terpinene 20%
- Alpha Terpinene 10%
- 1,8% Cineole 4%
- Terpinolene 3,5%
- Para Cymene 3%
- Sabinene 1,2%

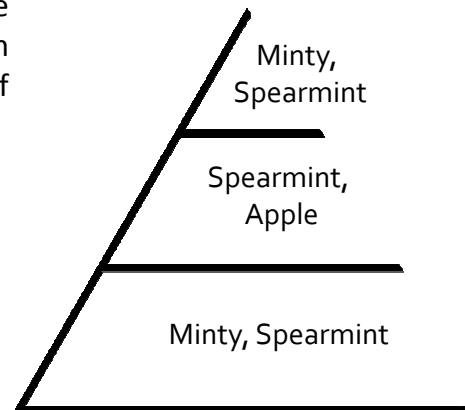
CLAIM

- **Antidandruff:** Tea tree oil is a very powerful natural antibacterial and it also has excellent anti-inflammatory and antifungal compounds making it an excellent choice for dandruff reduction regardless of the cause of your condition*

PERFUME

Dark Mood
54.680.0662

With 0,1% Tea Tree Essential Oil



TEA TREE OIL
Melaleuca alternifolia Cheel




RUJACIOUS | AMBER | BASILIC | CISTRUS | CUMIN | FENICHEL | FLORAN | FRUTY | GOURMAND | GREEN | **HERBAL AROMATIC** | EPICY | WOODY

CAS NUMBER	85085-48-9
OLFACTIVE DESCRIPTION	Fresh Herbal Cineolic
ORIGIN OF PLANT	Australia
PROCESSED PART OF PLANT	Branches
PROCESS	Steam Distillation
ASPECT	Mobile liquid - Colorless to yellowish
STORAGE CONDITIONS	Closed recipients, away from the light, in a cool, dry place (optimum storage temperature between 10°C and 25°C).
MAIN COMPONENTS	Terpinen-4-ol, alpha-terpinene, terpinolene

CROP SEASON

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

ALTERNATIVE CAS 68647-73-4	EINECS 285-377-1	FLASHPOINT 52°C
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SEPTEMBER 2016




*<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1360273/>

3. ESSENTIAL OILS

APPLICATION
IN HAIR CARE



HAIR CARE FORMULATION

TRANSPARENT SHAMPOO SULFATE FREE



CRODA

Development Formulation

Shampooing transparent Sulfate Free

Product (INCI Name)	Functionality	% w/w
Water (Aqua)		To 100
Crodasinic LS30 NT (Sodium Lauroyl Sarcosinate ¹)	Anionic Surfactant	30.0
Crodateric CAB 30 (Cocamidopropylbetaine ¹)	Amphoteric Surfactant	10.0
Glycérine (Glycerin ¹)	Humectant	2.00
Versathix (PEG-150 Pentaerythrityl Tetrastearate (and) PPG-2 Hydroxyethyl Cocamide (and) Aqua ¹)	Rheology Modifier	5.00
Sorbate de potassium (Potassium Sorbate)	Preservative	0.40
Benzoate de Sodium (Sodium Benzoate)	Preservative	0.40
Acide Lactique (Lactic Acid)	pH Adjuster	qs

Suppliers: 1: Croda

Method

Disperser les conservateurs dans l'eau puis ajouter la glycérine, le Crodasinic et le Crodateric.
Chauffer le mélange à 55°C en homogénéisant.
Ajouter le Versathix sous agitation lente.
Ajuster le pH avec l'acide lactique.

Remarque : le Versathix peut être incorporé avant le chauffage.

Non-warranty

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HAIR CARE FORMULATION

TRANSPARENT GREEN SHAMPOO



CRODA

Development Formulation

Shampooing Green APG

Product (INCI Name)	Functionality	% w/w
Water (Aqua)		To 100
Crodasinic LS30 NT (Sodium Lauroyl Sarcosinate ¹)	Anionic Surfactant	10.0
Crodateric CAB 30 (Cocamidopropylbetaine ¹)	Amphoteric Surfactant	10.0
Oramix NS 10 (Decyl glucoside ²)	Anionic Surfactant	10.0
Versathix (PEG-150 Pentaerythrityl Tetrastearate (and) PPG-2 Hydroxyethyl Cocamide (and) Aqua ¹)	Rheology Modifier	3.00
Sorbate de potassium (Potassium Sorbate)	Preservative	0.40
Benzoate de Sodium (Sodium Benzoate)	Preservative	0.40

Suppliers: 1: Croda 2: Seppic

Method

Disperser les conservateurs dans l'eau puis ajouter le Crodasinic, le Crodateric et l'Oramix.
Chauffer le mélange à 55°C en homogénéisant
Ajouter le Versathix sous agitation lente.

Remarque : Le versathix peut être ajouté avant le chauffage, on obtient le même résultat.

Non-warranty

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HAIR CARE FORMULATION

SPRAY CAPILLAIRE SOS SELFIE



CRODA

Development Formulation

Spray Capillaire SOS Selfie

Le Spray Capillaire SOS Selfie, un concept novateur destiné aux adolescentes. Cette formule, développée pour être utilisée en toutes circonstances et dans toutes les positions, va permettre aux demoiselles d'être prêtes et toujours au top pour obtenir le selfie parfait. Plaisir d'utilisation et coquetterie sont de la partie pour apporter brillance (Crodamol STS) et fraîcheur (Crodamol W). Avec de fines palettes associées à une texture étonnante à l'incroyable pulvérisation (Volarest FL), il n'aura jamais été aussi simple et pratique de sublimer ses cheveux. Sa formule est enrichie d'un complexe hydratant unique testé sur le cuir chevelu (Duraquench IQ SA) et d'un extrait de perle (Crodarom Pearl Extract). Le Spray Capillaire SOS Selfie saura prendre soin des chevelures les plus malmenées et se faire adopter pour devenir un atout incontournable des selfies réussis !

Product (INCI Name)	Functionality	% w/w
Phase A		
Water (Aqua)		To 100
Pricarine™ 9091 (Glycerin ¹)	Humectant	4.00
Phase B		
Volarest™ FL (Acrylates/ Beheneth-25 Methacrylate Copolymer ¹)	Rheology Modifier	1.60
Phase C		
Crodamol™ W (Stearyl Heptanoate (and) Stearyl Caprylate ¹)	Cooling Emollient	0.50
DuraQuench™ IQ (Cetyl Alcohol (and) Isostearyl Isostearate (and) Potassium Cetyl Phosphate (and) Cetyl Behenate (and) Behenic Acid ¹)	Moisturiser/ Conditioner	1.80
Crodamol™ STS (Ppg-3 Benzyl Ether Myristate ³)	Emollient	1.50
Phase D		
TEA (50%) (Triethanolamine)	pH Adjuster	Qsp pH 6,8
Phase E		
Euxyl PE 9010 (Phenoxyethanol (and) Ethylhexylglycerin ²)	Preservative	1.00
Crodarom™ Pearl Extract (Water (And) Glycerin (And) Hydrolyzed Pearl (And) Sea Salt ⁵)	Moisturiser	0.50
Kobopearl Perpetual IO Violetorange (Synthetic Fluorophlogopite (And) Silica (And) Titanium Dioxide (And) C.I. 77491 ⁴)	Pigment	0.50
D&C Red 33 A (30%) (C.I. 17200 ⁴)	Pigment	0.11
Lovely World ⁶	Perfume	0.2

Suppliers: 1: Croda 2: Schülke & Mayr 3: Crodarom 4: Kobo 5: Sensient 6: Expressions Parfumées

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CRODA

Development Formulation

Method

Chauffer les phases I et III à 60°C. Introduire la phase II dans la phase I sous agitation puis immédiatement après la phase III au mélange. Homogénéisez 1mn/100g à 10000tr/min. Refroidir sous agitation jusqu'à 45°C. Ajouter la phase IV puis les différents constituants de la phase V. Maintenir l'agitation jusqu'à température ambiante.

DuraQuench™ IQ SA

Complexe hydratant unique pour peau et cheveux

- Système d'hydratation intelligent par occlusion interne
- Efficacité prouvée pour les produits rincés et non rincés
- Propriétés conditionnantes perceptibles par l'utilisateur

Volarest™ FL

Libérez votre formule en toute légèreté

- Technologie « Fly and Stay »
- Libération ciblée et contrôlée d'émulsions sprayables
- Excellentes propriétés thixotropes
- Liquide facile à utiliser et processable à froid

Crodamol™ W

Apporter de la fraîcheur tout en douceur

- Emollient léger qui fond au contact de la peau
- Créer un effet cooling
- Toucher sec et fini coussin
- 100 % naturel et approuvé Ecocert

Crodamol™ STS

Booster la brillance des cheveux sans silicone

- Ester émoullent alternatif aux silicones
- Booste la brillance de la chevelure
- Améliore l'esthétique des émulsions et diminue le collant

HAIR CARE FORMULATION

COOLING SCALP SOOTHER



CRODA

Development Formulation

Cooling Scalp Soother/Universal Soother

C2704

The harshness of chemical treatments not only causes damage to the hair but can severely impact on the condition of your scalp. This light cooling scalp soother has been designed to restore a healthy environment on the scalp whilst providing much needed cooling relief post chemical treatment. DuraQuench™ IQ has been incorporated to provide essential moisturisation to the scalp while Crodamol™ W delivers a desirable cooling sensation. Finally, the delivery of the soother is thanks to Volarest™ FL, a unique rheology modifier to provide a sprayable fine mist of particles that can penetrate through the hair to be distributed evenly over the hair and scalp.

Though this formulation is suggested for scalp care applications, the cooling soother would be the perfect choice for sun burnt skin and would work well as a moisturising facial spritz.

Product (INCI Name)	Functionality	% w/w
Phase A		
Water (Aqua)		To 100
Pricerine™ 9091 (Glycerin ¹)	Humectant	4.00
Volarest™ FL (Acrylates/ Beheneth-25 Methacrylate Copolymer ¹)	Rheology Modifier	1.00
Phase B		
Crodamol™ W (Stearyl Heptanoate (and) Stearyl Caprylate ¹)	Cooling Emollient	1.00
DuraQuench™ IQ (Cetyl Alcohol (and) Isostearyl Isostearate (and) Potassium Cetyl Phosphate (and) Cetyl Behenate (and) Behenic Acid ¹)	Moisturiser/ Conditioner	2.50
Crodamol™ GTCC (Caprylic/ Capric Triglycerides ¹)	Emollient	1.00
Seatons Wheatgerm Oil (Triticum Vulgare (Wheat) Germ Oil ²)	Emollient	2.00
Phase C		
Euxyl PE 9010 (Phenoxyethanol (and) Ethylhexylglycerin ³)	Preservative	1.00
Sodium Hydroxide (25%) (Sodium Hydroxide ⁴)	pH Adjuster	1.00

Suppliers: 1: Croda 2: Croda Seatons 3: Savannah Fine Chemicals 4: Radchem

Method

Heat the water to 70-75°C, add Glycerin. Add the Volarest FL to the batch. Heat the phase B ingredients to 70-75°C. Combine when both phases are at 70-75°C, homogenise until smooth and uniform. Remove the homogeniser and insert the propeller stirrer, stir to cool to 40°C-45°C. Adjust the pH using sodium hydroxide to 7.0. Stir slowly. Add the preservative and mix slowly after addition until uniform.

PERSONAL CARE

DuraQuench™ IQ SA



Discover an innovative approach to effective moisturisation with Croda's scientifically balanced moisturising complex, DuraQuench IQ SA. By forming an intelligent structural bilayer on the skin's surface, DuraQuench IQ SA helps to reinforce the skin's natural barrier and delivers up to 72 hours of moisturisation from leave-on applications. Capable of adapting to the surrounding environment, DuraQuench IQ SA optimises skin hydration by regulating water loss from the skin at different temperatures and humidities. In rinse-off applications, DuraQuench IQ SA delivers proven consumer-perceivable skin and scalp moisturisation as well as hair conditioning benefits.

Product name	INCI name	Appearance
DuraQuench IQ SA	Cetyl Alcohol (and) Isostearyl Isostearate (and) Potassium Cetyl Phosphate (and) Cetyl Stearate (and) Stearic Acid	White pastille

Leave-on Features / Benefits

- Up to 72 hours long-lasting hydration
- Temperature and humidity responsive
- Visible improvement in skin dryness
- Delivers superior moisturisation via dual action technology

Applications

- Daily facial care
- Anti-ageing
- Body care
- Sun care
- Scalp and hair care
- Soaps and detergents

Wash-off Features / Benefits

- Physical reduction in skin drying in body and hand washes
- Proven skin and scalp moisturisation benefits
- Delivers additional hair conditioning attributes
- Consumer-perceivable for both the skin and hair

Seasonal variation and temperature controlled environments can lead to skin dryness¹. DuraQuench IQ SA has been developed to combat these changes in temperature and humidity, specifically by reducing water loss more effectively at low relative humidity. With effective moisturisation contributing towards anti-ageing performance², DuraQuench IQ SA delivers a significant improvement in skin barrier function for lasting hydration benefits.

HAIR CARE FORMULATION

SCALP QUENCHING CONDITIONER

Scalp Quenching Conditioner		C2711
Product (INCI Name)	Functionality	% w/w
Phase A		
Incroquat™ Behenyl TMS-50 (Behentrimonium Methosulfate (and) Cetyl Alcohol (and) Butylene Glycol) ¹	Cationic emulsifier	3.00
Crodamol™ STS (PPG-3 Benzyl Ether Myristate) ¹	High gloss emollient	3.00
Cutissential™ 18-MEA 40 (C10-40 Isoalkylamidopropylethylidimonium Ethosulfate (and) Dipropylene Glycol) ¹	Highly substantive hair conditioning agent	2.00
DuraQuench™ IQ SA (Cetyl Alcohol (and) Isostearyl Isostearate (and) Potassium Cetyl Phosphate (and) Cetyl Stearate (and) Stearic Acid) ¹	Moisturising complex	1.00
KeraDyn™ HH (Bis-Ethyl(isostearyl)imidazoline Isostearamide) ¹	Conditioning agent	1.00
Phase B		
Water Deionised (Aqua)	-	To 100
Phase C		
Lactic Acid	pH adjuster	To pH 4-4.5
Euxyl PE9010 (Phenoxyethanol (and) Ethylhexylglycerin) ²	Preservative	0.40

Suppliers: 1: Croda 2: Schulke & Mayr

DuraQuench™ IQ SA

Discover an innovative approach to effective moisturisation for the skin and scalp with Croda's scientifically balanced moisturising complex, **DuraQuench IQ SA**.

DuraQuench IQ SA forms an intelligent structural bilayer on the skin's surface, helping to reinforce the skin's natural barrier and deliver up to 72 hours of visible moisturisation. By adapting to the surrounding environment, **DuraQuench IQ SA** also optimises hydration by regulating water loss from the skin at different temperatures and humidities.

Testing on the scalp and body has shown **DuraQuench IQ SA** is even effective from wash-off systems, where it also provides a sensorial benefit, thus enabling consumer perceivable moisturisation to be delivered no matter what the application.

Innovation you can build on™

- 72 hour long-lasting skin hydration
- Visibly moisturised radiant skin
- Temperature and humidity responsive
- Effective from wash-off systems
- Scalp moisturisation and hair care benefits



CRODA

HAIR CARE FORMULATION

SCALP HYDRATION



Product / INCI Name	Control (%w/w)	DuraQuench IQ SA (%w/w)
Water Deionised (Aqua)	To 100	To 100
Incroquat™ Behenyl TMS-50 (Behentrimonium Methosulfate (and) Cetyl Alcohol (and) Butylene Glycol)	3.00	3.00
Crodamol™ STS (PPG 3 Benzyl Ether Myristate)	5.00	5.00
DuraQuench™ IQ SA (Cetyl Alcohol (and) Isostearyl Isostearate (and) Potassium Cetyl Phosphate (and) Cetyl Stearate (and) Stearic Acid)	-	1.0
Crodacol™ C90 (Cetyl Alcohol)	1.20	0.60
Preservative	0.50	0.50
Sodium Hydroxide (pH to 4.0)	q.s.	q.s.

Table 6: Test Conditioner Formulations

3. CONCLUSIONS

- With this presentation we clearly demonstrate that essential oil play an important sensorial and functional role in hair and scalp care formulations when properly formulated.
- The sensorial role is linked to there respective olfactive character. Sensient Fragrances perfumers demonstrate that, trendy & creative olfactive concepts, can be developed using our premium essential oils.
- The functional role is due to the complex composition of essential oils. They have a strong activity for anti dandruff, hair grow and aromatherapy.
- As always, the finish product formulation is acting as a vehicle for active ingredients such as essential oils. For product claim, bear in mind that the best active ingredient with inappropriate personal care formulation will lose efficiency.



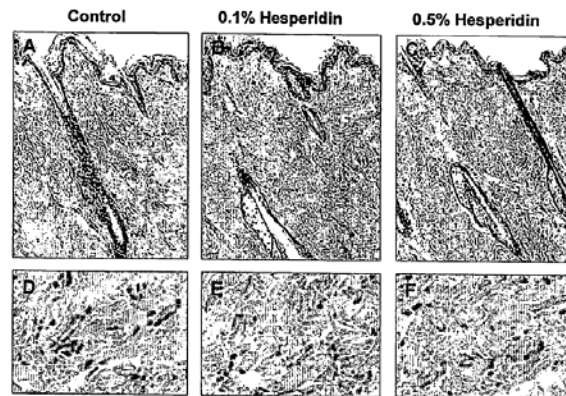
SENSIENT®

FRAGRANCES

THANK YOU



- Annexe 1a: <http://www.freepatentsonline.com/20070129428.pdf>



- Annexe 1b: <http://www.google.com/patents/EP0058595A2?cl=en>
- Annexe 1c: <http://www.ncbi.nlm.nih.gov/pubmed/21105176>
- Annexe 1d: <http://www.freepatentsonline.com/EP1990047A1.pdf>

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- Annexe 7: <http://www.ncbi.nlm.nih.gov/pubmed/25584150>
- Annexe 8: <http://www.ncbi.nlm.nih.gov/pubmed/23833718>
- Annexe 9: <http://www.ncbi.nlm.nih.gov/pubmed/20441789>
- Annexe 10: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1360273/>