ISSN: 0972-2114

THE FAFAI JOURNAL

VOL. XXII. NO. 1-3, JANUARY - SEPTEMBER 2020

FRAGRANCES & FLAVOURS
Association of India

Ultra International

Fragrances, Flavours & Essential Oils

Quality Revolution

Ultra International delivers Quality, to enrich your lives, to fulfil your dreams and to improve your tomorrow. Ultra has envisioned its long-term future in India & World wide to actively fill people's lives with moments of JOY and COMFORT. To fill your hearts with HAPPINESS and give you an experinece of the Global Standard in Quality.

This is Ultra's commitment towards the Globe.

www.ultrainternational.com ultra@ultrainternational.com +91-120-4388500

- GLOBAL NETWORK -

INDIA I NETHERLANDS I INDONESIA I SINGAPORE I USA I AUSTRALIA

LYRAL
TRIMOFIX
CASHMERAN
AMBER XTREME
SANJINOL
BACDANOL
ISO E SUPER
GALAXOLIDE
PRECYCLOMONE B
VERAMOSS
TRISAMBER
AMBERMORE EX
AMBRINOL 95
GALBASCONE
TIMBERSILK
MUSCEMOR
PHENOXANAL

JESSEMAL
HEXALON
AQUAFLORA
CYCLEMAX
FLEURAMONE
JASMAL
PHENAFLEUR
PEOMOSA
KOAVONE
TOBACOROL
LIFFAROME
VIOLIFF
VERTOFIX COEUR
CEDRAMBER
TRISAMBER
KARMAWOOD
FLORALOZONE

AND MANY MORE

AACIPL

info@aacipl.com

MANAN GANDHI 9619140985 · NIRAV MEHTA 9845015050 · YK MANJUNATH 9845042420 · SOPAN MORE 9819835142 · RIDDHI JATHAR 02224198807 · SATISH PATIL 7045606461 · SACHIN BHANDARE 9321608171

symrise
always inspiring more...

iff

Emerald Kalama® Chemical

kao

BIOLANDES
We keep learning from nature

KalpSutra
CHEMICALS PVT. LTD.

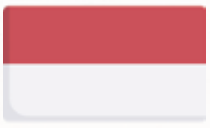
pfw

Keva

AARAV Ingredients

ORIGINS

SOUTH KOREA



INDONESIA

EGYPT

BRAZIL

HAITI

PARAGUAY

AACIPL

WWW.AACIPL.COM

INFO@AACIPL.COM

THE FAFAI JOURNAL

VOL. XXII NO. 1-3, January - September 2020

DEDICATED TO EXCELLENCE IN FRAGRANCES & FLAVOURS

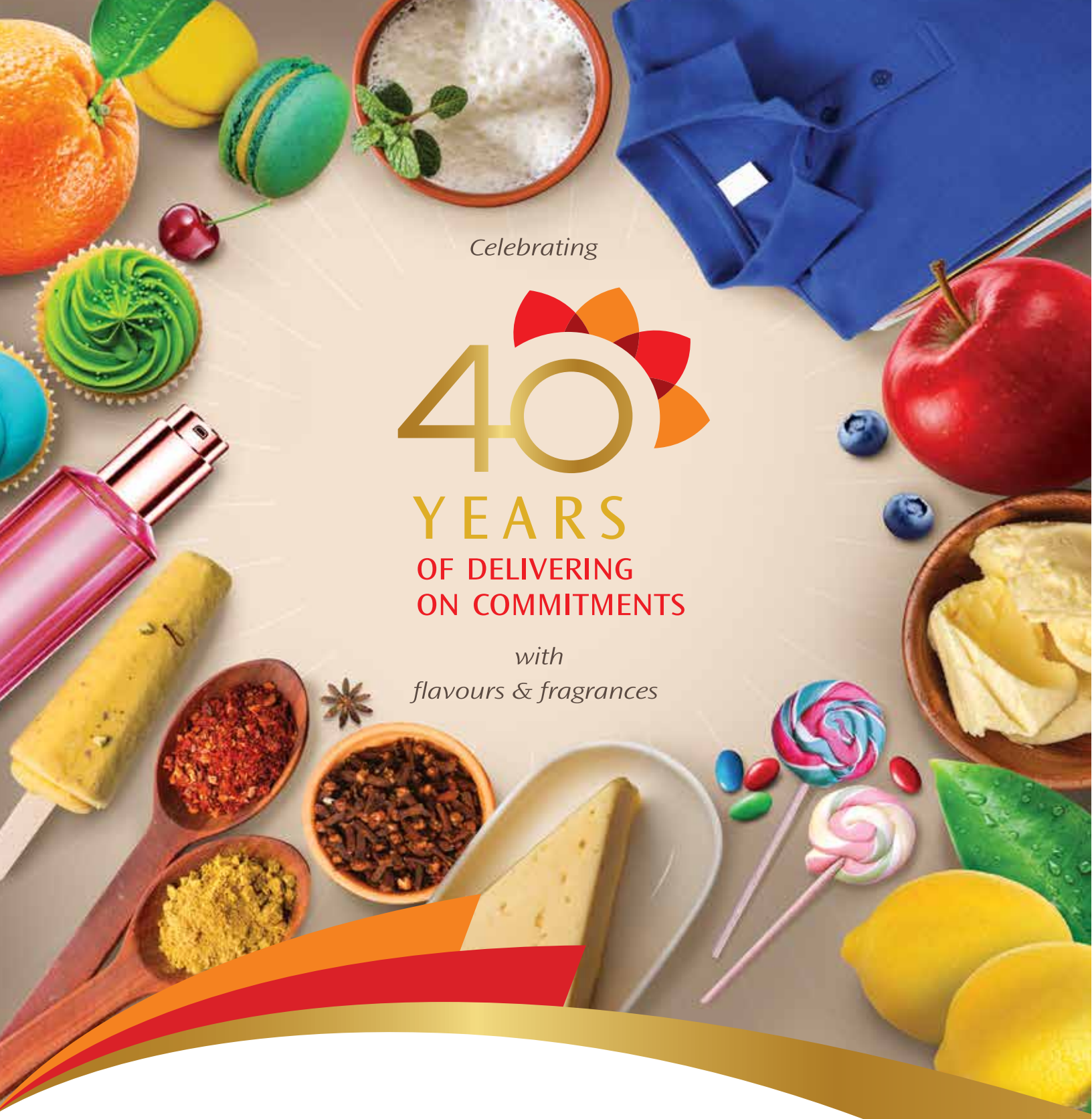
EDITORIAL BOARD

FRAGRANCES & FLAVOURS
Association of India
FRAGRANCES & FLAVOURS ASSOCIATION OF INDIA
N. R. Shah Hall
2-B, Court Chambers, Second Floor
35, Sir Vithaldas Thackersey Marg,
Mumbai - 400020
Tel.: 022 2209 0184 / 2207 6075
E-mail ID : mail@fafai.org
Website : www.fafai.org

CONTENTS PAGE NO.

Inland ₹500/- Single Copy ₹ 150/- By Air $ 40

Printed and Published by Kamlesh Hiralal Shah on behalf of **Frgrances & Flavours Association of India** , 2-B, Court Chambers, 35, Sir Vithaldas Thackersey Marg, Mumbai - 400020 and printed at **Onlooker Press**, 16 Sasoon Dock, Colaba, Mumbai - 400 005, **Editor Rishabh C. Kothari**



Complete range of flavours, natural food colours, spice blends and fragrances for body sprays, hand wash, sanitizers, cosmetics, soaps and detergents.

sonarome
India's No.1 flavour company

Sonarome Private Limited
One Sonarome Way
KIADB Industrial Area, Doddaballapur
Bangalore 561 203, India
FSSC 22000 & GMP CERTIFIED COMPANY

T +91 80 68902200
F +91 80 68902299
sonarome@sonarome.com
www.sonarome.com

Partner
iff

"It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair….

Dear Friends,

These are the opening lines by Charles Dickens in 'A Tale of Two Cities' but it might as well be a tale of the entire world!

Life as we have known it, has fundamentally changed for all of us by something which is not a living thing. It is just a few RNA (Ribonucleic Acid) strands covered with a protein sheath, so small that normal microscopes can't see it. It was there all along, but novel because of its new avatar or strain. It requires a living cell to start its activities and all it does is replicate itself. Nevertheless, in this process, it created havoc and chaos and succeeded to bring down the whole, mighty world down on its knees without any discrimination.

And yet there is a silver lining, a wake-up call, a lesson for one and all, as individuals, as a society, as a nation and for all of humanity. Amongst the several painful lessons is that we can no longer continue with the ruthless exploitation of nature. The climate crisis, erratic weather phenomena, pollution of air, land and ocean have pushed the country, and the world, to a dangerous brink. Unless this is reversed immediately, we are in for serious trouble by the end of the century. It was extraordinary that the lockdown period had led to nature regenerating. We saw blue skies again after many decades, pollution levels dropped, and several species of animals, birds and insects staged a comeback. We must try and ensure that these positive developments are sustained so that we do not revert to the old normal, but adopt a new normal vis-à-vis nature and everything else around us.

Our businesses have been affected, but again every crisis is also an opportunity. It is upon us to analyse, understand and benefit from changing global priorities, supply chains, product preferences and consumption patterns and the agile and the dynamic will surely not only come out unscathed but also grow.

We are faced with many choices. Whether it is about our health, lifestyle, relationships, priorities or attitudes, this pandemic has potentially shown us the mirror in all these aspects for us to choose. What it has also done is thrust upon us the inevitability of something where we have no choice, which is to change and thrive or not to do so and consequently struggle to survive. That is a choice for us to make. I hope we will all make the right one.

With prayers for your well-being and greetings to you and your loved ones for the ensuing festive season.

Rishabh C. Kothari
rck@ckc.in

VIJAY GROUP

Adding flavour & fragrance to life

MUMBAI • BENGALURU

SINCE 1982

www.viijaygroup.com

WE STOCK & TRADE AROMA INGREDIENTS, ESSENTIAL OILS & RESINOIDS OF

NATIONAL CO.

AKSHAY CHEMICALS - DOMBIVALI
ANKIT CHEMICAL - MUMBAI
ANSHUL SPECIALITIES MOLECULES PVT LTD - RAIGAD
AQULIA ORGANICS PVT LTD - MUMBAI
BBK SPECIALITIES - NAVI MUMBAI
ETERNIS FINE CHEMICALS PVT LTD - NASHIK
FINE O CHEM PVT LTD - GUJARAT
FLORA ESSENTIAL OILS - VAPI
GREEN LEAF EXTRACTIONS PVT LTD
GREEN PINE INDUSTRIES - UTTARAKHAND
GUJARAT ORGANICS LTD - GUJARAT
JAYSHREE AROMATICS PVT LTD - GUJARAT
KALPASUTRA CHEMICALS PVT LTD - AMBERNATH
LANXESS INDIA PVT LTD
MAC INDUSTRY - GUJARAT
MEHK CHEMICALS PVT LTD - NAVI MUMBAI
MORAYA GLOBAL LTD - NAVI MUMBAI
N .R.OILS - GUJARAT
ORGANICA AROMATICS PVT LTD - BANGALORE
ORIENTAL AROMATICS LTD - MUMBAI
PERFINE CHEMICALS
PRIVI SPECIALITY CHEMICALS PVT LTD - MUMBAI
S.G. AROCHEM INDUSTRIES - M.P
SODIUM METALS PVT LTD - GUJARAT
SUPER CHEMICALS - GUJARAT
SUPERMINT EXPORTS PVT LTD - BANGALORE
TADIEMETY AROMATICS PVT LTD - BANGALORE
TIDE INDUSTRIES - GUJARAT
U K AROMATICS & CHEMICALS - MUMBAI
VIKRAM THERMO INDIA PVT LTD - GFUJARAT

MORE THAN

1200

AROMA INGREDIENTS
AVAILABLE UNDER
ONE ROOF
MINIMUM
TO
MAXIMUM

INTERNATIONAL CO.

DSM, FIRMENICH, GIVAUDAN & IFF - SWITZERLAND
AMIGO - PARAGUAY
BIOLANDES - FRANCE
CHARABOT - FRANCE
DISTILLERE BLEU PROVENCE - FRANCE
DOMINUS OLEUM LTD - BULGARIA
HANGZHOU GRASCENT CO. LTD - CHINA
HENKEL (KAO) - JAPAN
K L KOH - SINGAPORE
MISSITANO & STRACUZZI S.P.A - ITALY
MUNOZ GALVEZ - SPAIN
NANJING COSMOS CHEMICALS CO.LTD - CHINA
NIPPON ZEON - JAPAN
O LAUGHLIN INDUSTRIES LIMITED - CHINA
PT K - INDONESIA
PT VAN AROMA - INDONESIA
RIVERA BALSAM - USA
TEXAROME - TEXAS

Roma Aromas
MUMBAI
SINCE 1997
JITESH GUDKA
+91 93211 11912
+91 22 24132121
+91 22 24162124
roma@viijaygroup.com
www.viijaygroup.com/roma

Vijay Trading Co.
MUMBAI
SINCE 1992
KETAN SAVLA
+91 93222 66728
+91 22 24132120 / 23
+91 22 24163504
vtco@viijaygroup.com
www.viijaygroup.com/vtco

UNITED CHEMICALS & PERFUMES
BENGALURU
SINCE 1997
MIRAJ DODHIA
+91 94277 73902
+91 88669 97473
+91 80 23116330
+91 80 23407863
ucpsbc@gmail.com

DI ETHYL PHTHALATE (DEP)

CAS: 84-66-2

TRI ETHYL CITRATE (TEC)

CAS: 77-93-0

INDO-GSP CHEMICALS LLP

ISO 9001, 14001, 22000, OHSAS 18001, GMP, REACH, HACCP, SEDEX Certified

info@indogsp.com

+91 72783 65146
+91 98210 83557

www.indogsp.com

Quality. Service. Reliability.

Labdanum

Gum Resinoid Absolute Ambreine Cistus

Aromatic Fine Chemicals

- Alpha Pinene
- Alpha Terpinene
- Beta Pinene
- Bornyl Laevo Acetate
- Borneol Laevo Pure
- Fenchone Laevo
- Fenchone Dextro
- Fenchyl Acetate
- Fenchyl Alcohol
- Gamma Terpinene

Spanish Essential Oils

- Cade
- Cistus
- Cypress
- Spike Lavender
- Fennel
- Lavandin
- Origanum
- Pennyroyal
- Rosemary
- Rue
- Sage
- Thyme

Destilerías Muñoz Gálvez S.A.

Since 1920 (Spain)

Be Different Be Spanish !

Hola! welcome the Citrus family from Spain!!

- Bergamot Oil
- Grapefruit Oil
- Lemon Oil
- Lime Oil
- Mandarin Oil
- Orange Oil

Sole agents in India

INDENTA™
ISO 9001:2015 Certified Company

117, The Summit Business Bay,
Off Andheri Kurla Road,
Nr. WEH Metro Station, Andheri (E),
Mumbai 400093. INDIA

Tel.: 91-22-2684 9600
Fax: 91-22-2684 9060
Email: indenta@indenta.com
URL: www.indenta.com

SINCE 1970 Decades of Excellence

• India • China • USA • Australia

INDENTA

Breathing life in the Chemistry

Manufacturers & Exporters

- Potassium Hydroxide Pellets
- Sodium Hydroxide Pellets
- Methyl Salicylate
- Salicylic Acid
- Essential Oils
- Laboratory & Research Chemicals
- Pharma Grade Essential Oils

Sole agents in India

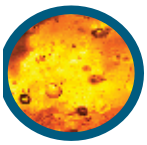
INDENTA™
ISO 9001:2015 Certified Company

117, The Summit Business Bay,
Off Andheri Kurla Road,
Nr. WEH Metro Station, Andheri (E),
Mumbai 400093. INDIA

Tel.: 91-22-2684 9600
Fax: 91-22-2684 9060
Email: indenta@indenta.com
URL: www.indenta.com

SINCE 1970 Decades of Excellence

• India • China • USA • Australia


RESINS


PHARMA


FLAVORS & FRAGRANCES


FOOD & BEVERAGES


PAPER CHEMICALS


RUBBER


PAINTS & COATINGS

SOAPS & DETERGENTS


ADHESIVES & PRINTING INKS

Isobornyl Acetate
Delta-3 Carene
Gum Rosin
Turpentine
Pine Tar
Pine Oil
Longifolene
Dipentene
Terpinolene
Terpineol
Beta Pinene
Iso Borneol
Camphene
Terpinyl Acetate
Alpha Pinene
Dihydromyrcenol
Ester Gum
Camphor Oil
Camphor

HIMALAYA TERPENES PVT. LTD.

" Delivering Quality Pine Chemicals since 1971"

GREEN PINE INDUSTRIES

Govt. of India Recognized Star Export House

Resin Division
103/2, Railway Rd, Rishikesh 249201 Uttarakhand India

Terpene Division
Plot No 109-110, Shiv Ganga Industrial Estate,
Bhagwanpur, Roorkee, Uttarakhand -247662, India

Corporate office,
201/5, Jogani Industrial Estate, V N Purav Marg,
Chunabhatti, Mumbai - 400022.
T : +91-22-24056704/ 05
F : +91-22-24056700
E : info@himalayaterpene.com
www.himalayaterpene.com / www.greenpine.in

“FRAGRANCE AND FLAVOUR THAT EVOKE SENSES AND STIR FEELINGS”

As the food & beverage industry grows at an unprecedented rate, supported by technology and evolving palates, flavour demands are changing.

A fragrance can unlock your memory, transport you across the world, or journey you to your happy place — all in one breath.

SACHEEROME
Fragrance & Flavour
EVOKING SENSES

www.sacheerome.com
info@sacheerome.com
linkedin/sacheerome
instagram/sacheeromeglobal

SATYAM ENTERPRISES

A PART OF

Thakker Group
a promise for quality

INDIA'S ONLY EXCLUSIVE INDENTOR AND DISTRIBUTOR FOR

CCC CALABRIAN CITRUS CENTER
CITRUS OILS AND FLORAL PRODUCTS

OUR PRODUCT RANGE

BEWARE OF IMITATION

LEMON OIL STANDARD 4% CITRAL
LEMON TERPENES
BERGOMAT OIL STANDARD
BERGOMAT OIL BERGAPTENE FREE — VARIOUS GRADES
MANDARIN OIL GREEN TYPE
MANDARIN OIL RED PURE

LEMON OIL PURE
LEMON OIL CONC 4X
BERGOMAT OIL PURE
BERGOMAT OIL NATURAL
MANDARINE OIL YELLOW
BITTER ORANGE OIL PURE
NEROLI OIL ITALIAN

ADDRESS YOUR QUERIES TO: -

SATYAM ENTERPRISES

507 NAIN KRUPA BUILDING, 118/122 KAZI SYED STREET,

MASJID BUNDER (WEST) MUMBAI – 400 003, MAHARASHTRA INDIA

TEL: 022 23432526, 23448032 FAX: 02223401805

Write to us on: thakker_group@outlook.com

FOLLOW US ON: www.thakkergroup.co.in

Fine Fragrances

Quality fragrances for cosmetics, body sprays, fine fragrances, hair oils, gels, lotions, hand wash, sanitizers and body lotions.

40 YEARS
OF DELIVERING
ON COMMITMENTS

sonarome
India's No.1 flavour company

Sonarome Private Limited
One Sonarome Way
KIADB Industrial Area, Doddaballapur
Bangalore 561 203, India
FSSC 22000 & GMP CERTIFIED COMPANY

T +91 80 68902200
F +91 80 68902299
sonarome@sonarome.com
www.sonarome.com

Partner
iff

Bergamot Oil FCF

Bergapten Free!
Furocoumarins Free!

" Bergamot Oil FCF offers a unique combination of aroma, purity and safety to our Indian customers."

FRAGRANCE & FLAVOUR
INGREDIENTS

Bontoux Naturals Pvt. Ltd. : 412, B Wing, Kanakia Wallstreet, Andheri Kurla Road, Chakala, Andheri (E),
MUMBAI 400093, INDIA
T. +91 22 62396058 - +91 22 62396059 - bontoux.india@bontoux.com - **bontoux.com**

Musks & Fragrance

Indentors for : AROMATIC CHEMICALS & ESSENTIAL OILS

911/A, 'B' Wing, Kanakia Wall Street, Near Holy Family Church, Andheri Kurla Road,
Andheri (East), Mumbai - 400093.(India).
Tel. : +91-22-68151800(100 lines) E-Mail : indentor@muskfrag.com Web : www.muskfrag.com

INDENTORS FOR AROMATIC CHEMICALS & ESSENTIAL OILS

Kindly Contact us for your requirements of

KANATOL-200 (DEP)
KANATOL-201
KANATOL-8A (DOA)

Manufactured by our principal

KLJ PLASTICIZERS LTD.
Silvassa, India

GEM AROMATICS PVT. LTD

MINT OIL & ISOLATES

Peppermint Oil (Ex Mentha Piperita Oil)
Peppermint Oil (Ex Mentha Arvensis Oil)
Peppermint Oil Blends (Arvensis + Piperita)
Peppermint Oil (ex DMO)
D M O
Menthones (70/28, 80/20, 90/10 &95/5)
Mint Terpenes
Menthyl Acetate
Spearmint Oil
L-Limonene (60 to 98%)
L-Carvone70 to 99%
L-Menthol (Flake, Rice & Bold Crystals)
CIS-3-Hexanol Natural 95% & 98%
CIS-3-Hexenyl Acetate Natural 98%
CIS-3-Hexenyl Butyrate
CIS-3-Hexenyl Caproate
CIS-3-Hexenyl Caprylate
CIS-3-Hexenyl Benzoate
CIS-3-Hexenyl Valerate
CIS-3-Hexenyl Iso-Valerate
CIS-3-Hexenyl Salicylate

CLOVE OIL & ISOLATES

Clove Leaf Oil 70 to 90%
Clove Bud Oil
Eugenol 99% & 99.5%
Iso Eugenol
Methyl Eugenol
Methyl Iso Eugenol

Di Hydro Eugenol
Eugenol Acetate
Iso Eugenol Acetate
Caryophyllene 65%-95%
Caryophyllene Acetate

GEM AROMATICS PVT. LTD

ESSENTIAL OILS AND ISOLATES

Citronella Oil-Indian
Citronella Oil-Java
Lemon Grass Oil
Palmrosa Oil
Cinnamon Leaf Oil
Cinnamon Bark Oil
Cumin Seed Oil
Linalool Natural
Frankincense Oil
Pomegranate Seed Oil

Celery Seed Oil
Carrot Seed Oil
Turmeric Oil
Linalyl Acetate Ex-Mentha Citrata
Geranyl Acetate Ex-Palmrosa
Geranyl Butyrate
Holy Basil Oil
Basil Oil
Anethole
Estragole

Aroma/Organic Chemicals

WS-03 (Cooling Agent), WS-23, Cuelure

Eucalyptus Oil

Eucalyptus Globulus Oil (60% to 90%)
Eucalyptol

HEAD OFFICE:
A/410, Kailash Complex, Powai Vikhroli Link Rd, Vikhroli (W), Mumbai- 400079. INDIA
Mobile : +9819735599/ 9320035599/ 9320026575. • **Email:** yparekh@gemaromatics.in | vparekh@gemaromatics.in
Mfg. Unit I : Plot No. 2, 16/4/2, Near Alok Industries, Rakholi, Silvassa-396230 (D & NH), INDIA
Mfg. Unit II : 8/9/10 Khasara No, Village Gathona, Ujhani Budaun Rd, District: Budaun-243639. UP INDIA

Leo Chemo Plast Pvt. Ltd.

In pursuit of excellence

WE HAVE READY STOCK AVAILABLE AS BELOW:

- ACETOPHENONE
- BENZOIC ACID
- CYCLOHEXNONE
- DI PROPYLENE GLYCOL USP – FRAGRANCE GRADE
- ETHYL ACETO ACETATE
- FORMIC ACID 99%
- ISO BUTANOL
- ISO BUTYRIC ACID
- N BUTYRIC ACID
- N BUYRALDEHYDE
- PARA TERITARY OCTYL PHENOL
- PARA TERITARY BUTYL PHENOL
- PROPIONIC ACID
- PROPYLENE GLYCOL USP
- PROPIONALDEHYDE
- SODIUM METAL
- SODIUM METHOXIDE POWDER
- SODIUM BOROHYDRIDE POWDER
- SODIUM BOROHYDRIDE GRANULAR
- TERTIARY BUTANOL

Contact us for your req uirements.

Leo Chemo Plast Pvt. Ltd.

B-126, Ghatkopar Industrial Estate, Off. L.B.S. Marg, Behind R City Mall, Ghatkopar (West), Mumbai - 400 086.
Tel.: 022-4027 9000 (30 lines) ■ Fax : 2500 8356 ■ Email : info@leochemo.com ■ leo@leochemo.com
Website : www.leochemo.com

www.norex.in

NOREX 25
YEARS OF EXCELLENCE

WORLD OF POSIBILITIES

FLAVOURS - FRAGRANCES - MENTHOL - MINT OILS - ESSENTIAL OILS

INSPIRED by *Nature*

NOREX FLAVOURS PRIVATE LIMITED

A Star Export House Recognised by Government of India.

Gajroula Chandpur Road,
MANDI DHANAURA - 244231
Distt Amroha, U.P., INDIA

Unit -02, Amroha Road,
DHANAURA - 244231
Distt Amroha, U.P., INDIA

Tel: +91-5924-273095 / 273241
Fax: +91-5924-273328/275318
email : sales@norex.in

Noida Office : 606, 6th Floor, Wave Silver Tower,
Sector 18, Opp. Sector 18 Metro Station,
Noida - 201301, U.P. INDIA | +91 120 2664141

Contact Sales @ **+91-7055201570 / 7060297400**

Local Sales support is also available in Chennai and Mumbai Regions


WE ARE
CONTINUOUSLY TRANSFORMING, WHILE REMAINING TRUE TO OUR FOUNDING IDEALS
VARIED, YET UNITED BY AN ENERGETIC PURSUIT OF OUR GOALS AND VISION
Keva
THE INTANGIBLE CATALYST THAT PRODUCES TANGIBLE RESULTS

WHERE SCIENCE BLENDS WITH ART

01 | A SCIENTIFIC EDGE AND AN ARTISTIC IMAGINATION

A scientific edge and an artistic imagination are the integral pillars of Keva (S H Kelkar & Company Limited) that began in 1922. Here, science and art have played an equal part, ensuring continued growth and success for our clients across the world.

EXPERTS IN FRAGRANCES AND FLAVOURS

ARTISTS, WHOSE CREATIONS ADD VIBRANCY TO THE LIVES OF MILLIONS AROUND THE WORLD

02 | CONTINUOUS EVOLUTION & STRATEGIC INVESTMENTS IN TECHNOLOGIES & NEW MARKETS

Globalized economy entails a more complex and competitive landscape. We embrace this challenge wholeheartedly as we consistently evolve and refine our offerings and processes.

03 | LARGE SCALE, YET OPERATIONALLY NIMBLE

Our manufacturing excellence stems from the ease with which we manage complex operations, resulting in a unique combination of size and agility.

04 | SPREAD ACROSS THE GLOBE

Manufacturing facilities at India, Netherlands & Italy. Creative centres in Mumbai & Amsterdam. Cater to clients across Asia, South East Asia, Middle East, Europe & Africa.

FRAGRANCES, FLAVOURS & AROMA INGREDIENTS

Our memorable scents and flavours are present across varied categories and we are involved with millions of brands!

S H Kelkar & Company Limited

L.B.S. Marg, Near Balrajeshwar Temple, Mulund (W), Mumbai - 400 080.

+91 22 2167 7777 | +91 22 2164 9161 www.keva.co.in

Colours Farmed with Passion

Natural Food Colours – Liquid & Powder

Dairy, confectionary, savoury, fruit juices, ice-creams, cake decorations, pharma syrups, fruit specialties, bakery, sorbets, biscuit creams, desserts, jams, frozen desserts, snacks, jelly crystals, alcoholic and non-alcoholic beverages, soups & sauces, soft drinks, cereals.

40 YEARS
OF DELIVERING
ON COMMITMENTS

sonarome
India's No.1 flavour company

Sonarome Private Limited
One Sonarome Way
KIADB Industrial Area, Doddaballapur
Bangalore 561 203, India
FSSC 22000 & GMP CERTIFIED COMPANY

T +91 80 68902200
F +91 80 68902299
sonarome@sonarome.com
www.sonarome.com

Partner
iff

symrise

INDULGENCE OF THE NUTTY FILBERTONE
SCENT BY SCENT

Karnataka Aromas and the leaders of the F&F industry shake hands to bring you one of the finest ingredients to help elevate your creativity to inconceivable heights. We present to you Filbertone which is hazelnut in nature with a wide variety of applications in the Flavour and Fragrance industry.

The odour profile of Filbertone can be described as nutty (resembling hazelnut), fruity, fatty, dried fruit like and green. In perfumery, Filbertone can be used to boost the top note because of its highly diffusive properties. It also goes well with citrus and exotic fruit notes. Filbertone gels well with rose and sandalwood.

Useful In	**Fragrance:** Body Lotion, Shampoo/Shower Gel, Soap, AP Roll-on 15%, Detergent Powder Conc., Cleaner Liquid Citric Acid and Cleaner APC Liquid
	Flavours: Nuts, Cocoa, Coffee, Brown, Mint, Citrus, Tropical Fruit and Fruit.
Olfactory	Fruity, Hazelnut, Green, Dried Fruit.

KARNATAKA AROMAS

T: +91 80 4346 8800 / 8801 ▪ E: aromas@karnatakaaromas.com ▪ W: karnatakaaromas.com

Scent perCent
FLAVOURING INGREDIENTS
FROM WORLD LEADERS.

Karnataka Aromas has been inspiring the world leaders to elevate their business with a range of aromatic ingredients for their flavour and fragrance necessities. The well thought through customized ingredient we offer will refresh and revitalize the sensibilities of the market. Your products are ***Scent assured***.

Eternal Pearl

- Ethyl Vanillin
- Vanillin

Bestally
Taste with thoughts.

- Acetoin
- Cuminic Aldehyde
- Ethyl Maltol
- 2 acetyl Pyrazine
- Furaneol
- Maltol
- Vanillin Iso Butyrate

CHINESE

- Aldehyde C-14
- Aldehyde C-18
- Delta Decalactone
- Delta Do Decalactone
- Delta Nonalactone
- Diacetyl
- Ethyl Butyrate
- Ethyl-2-Methyl Butyrate
- Fructone
- Gama Decalactone
- Maple Lactone
- Milk Lactone
- Sulfurol

symrise

- Allyl Caproate
- Aldehyde C-12 MNA
- Aldehyde C-18
- Cis-3-Hexanyl Salicylate
- Macrolide® Supra (CPD)
- Rose oxide L
- Filbertone
- Farnesol Special

KARNATAKA AROMAS

T: +91 80 4346 8800 / 8801 ▪ E: aromas@karnatakaaromas.com ▪ W: karnatakaaromas.com

Palate refreshing, **INTRIGUING FLAVORS!**

Create truly irresistible edible products with the exquisite and delectable flavor ingredients from Karnataka Aromas that combines taste in a subtle manner for a truly appetizing indulgence.

PRODUCTS

- **Milk Lactone**
- **Maple Lactone**
- **Delta Decalactone**
- **Delta Do Decalactone**
- **Delta Nonalactone**
- **Gama Decalactone**

+91 80 4346 8800 / 8801
aromas@karnatakaaromas.com
karnatakaaromas.com

KARNATAKA AROMAS
A MARLECHA VENTURE

Musks & Fragrance

Indentors for : AROMATIC CHEMICALS & ESSENTIAL OILS

911/A, 'B' Wing, Kanakia Wall Street, Near Holy Family Church, Andheri Kurla Road,
Andheri (East), Mumbai - 400093.(India).
Tel. : +91-22-68151800(100 lines) E-Mail : indentor@muskfrag.com Web : www.muskfrag.com

We indent for

Kuraray Co. Ltd., Japan
Citral-R / Isoprenol / Isovaleral / Prenol
3MMB (3-Methoxy-3-Methyl-1-Butanol)
2-Phenylpropanal (Hydratropic Aldehyde)

KLJ Plasticizers Ltd. India
Kanatol-200 (D.E.P.) / Kanatol-201

Super Chemicals, India
Cinnamic Alcohol / Yara Yara

Moraya Global Ltd. India
Indole / Skatole / Styrallyl Acetate
Allyl Amyl Glycolate

Jiaxing Zhonghua Chemical Co.Ltd., China
Vanillin Julan Ex Catechol / Vanillin Eternal Pearl
Ethyl Vanillin Eternal Pearl

Aripê Citrus Agro Industrial Ltda. (Bio-Citrus) Brazil
Bitter Orange Oil CP / Orange Oil CP / Lemon Oil CP / Mandarin Oil CP Green
Mandarin Oil CP Red / Persian Lime Oil CP / Tangerine Oil CP

FAFAI News

Despite the pandemic, several initiatives and activities were undertaken by FAFAI.

FAFAI organised the following online events wherein members could attend the proceeding both through Zoom as well as FAFAI Facebook page.

Webinar titled - Business in the Post COVID 19 Era

In Association with All India Agarbathi Manufacturers Association of India (AIAMA), a webinar on the subject "Business in the post COVID 19 Era" was organized on Sunday, the 12th April, 2020 .

The distinguished speakers at the event were
Mr. Aditya Agarwal, Director, Emami Group
Mr. Arjun Ranga, President, AIAMA
Mr. Rishabh Kothari, President, FAFAI

The event was very well received by all the members and members also lauded this first ever online event initiative by FAFAI.

Interaction with Shri Suresh Prabhu ji titled Decoding the future – Business in the post COVID 19 Era

On 26th April, 2020, a live online interaction was organised with Shri Suresh Prabhu, Member of Parliament, former Commerce Minister and the Prime Minister's Sherpa to the G7 and G20. This event was organised in partnership with the All India Agarbathi Manufacturers Association of India (AIAMA). An eloquent speaker, Shri Prabhu enthralled the audience with his insightful observations on the future of business in the post Covid era.

Interaction with Shri Nitin Gadkariji, Union MSME Minister

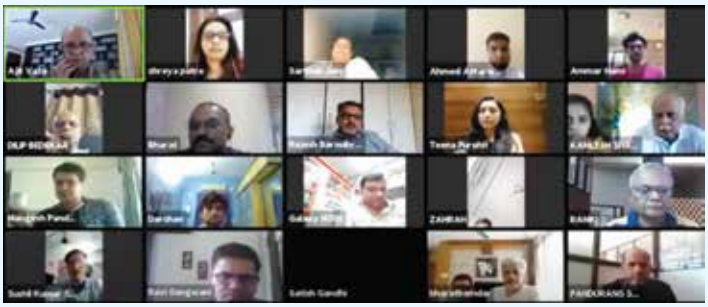
A live online interaction was organised with Shri Nitin Gadkari ji, Honourable Union Minister of Micro, Small and Medium Industries (MSMEs) as well as Road Transport and Highways, Govt. of India on 6th May 2020.

This significant interaction was conducted in partnership with the All India Agarbatti Manufacturers Association (AIAMA) and was moderated by Shri Arjun Ranga, President, AIAMA and Shri Rishabh Kothari, President, FAFAI. Shri Gadkari ji answered a host of questions around Government policy, incentives and the future for both the F&F, Aroma and Agarbatti Industries. He also promised all help to overcome any challenge that the industry may be facing under the existing circumstances.

Perfumery Masterclass

FAFAI initiated a new series called the Perfumery Masterclass where leading Perfumers will be invited to share their thoughts, insights and take up a certain aspect of perfumery in an exclusive online session.

The first edition of the FAFAI Perfumery Masterclass was organized on 24th May 2020 wherein FAFAI Past President and CEO of M/s. Aarav Flavours and Fragrances Pvt. Ltd., Mumbai Mr. Ajit Suresh Vaze discussed the subject "How to Read a Formula".



The session was extremely vibrant and was followed by an equally interesting Q&A session wherein members asked several questions related to almost all aspects of perfumery.

FAFAI member Shri Sant Sanganeria contributes to BHU

Senior FAFAI member Shri Sant Sanganeria has, through the Sanganeria Foundation, New Delhi, established the Shri Sant Sanganeria Rotating Professorship for Excellence in industrially relevant research at the Benaras Hindu University.

In its efforts to promote excellence in research and incentivize faculty members who have made highly significant scientific contributions, BHU has created this rotating professorships in its Institute of Science. The Executive Council of BHU, in its recently held meeting, approved the creation of two rotating professorships and guidelines related to selection process. Under this scheme, a faculty member from the Institute of Science will be selected on the basis of their outstanding research contributions and provided Rs.20,000/- per month honorarium for two years, in addition to their regular salary. This is being from an endowment of Rs.30 Lakhs donated by the Sanganeria Foundation.

FAFAI President and members appreciate the efforts made by Shri Sant Sanganeria with this generous endowment.

Indian Fragrances and Flavours Reference List of Ingredients

In the midst of global pandemic, people worldwide are getting more and more conscious of the products they consume. The Fragrance and Flavour Industry has always been cognizant of consumer preferences and their safety has always been paramount in whatever we do, The interests of consumers as well as the need for transparency and clarity has motivated FAFAI to present to members the first edition of Indian Fragrances and Flavours Reference list of Ingredients.

This publication a list of its kind compilation of more than 9000 ingredients which are being widely used and generally considered safe by the Indian Fragrances and Flavours industry.

This is the first edition of this publication compiled with contribution and inputs from all the members of the industry and we are also grateful to Dr. Ram Viswakarma, Chairman PCD 18, Bureau of Indian Standards,

Govt. of India for his inspiration and guidance and Mr. Shakti Vinay Shukla and his entire team at Fragrance and Flavour Development (FFDC), Kannauj, a Centre under the Ministry of MSMEs, Government of India who partnered with us in the endeavour.

We have also been fortunate to receive messages of support and blessings from the highest echelons of our Government including our beloved Prime Minister Shri Narendra Modiji and Union Minister of Micro, Small and Medium Industries (MSMEs) Shri Nitin Gadkariji, Hon'ble Member of Parliament Shri Subrat Pathakji and the Director General of Bureau of Indian Standards Shri Pramod Kumar Tiwari all of which is huge morale booster for all of us.

Our Industry and Nation is working with the Government's vision of an Atmanibar Bharat and we shall all do whatever is necessary and expected in this great quest.

सत्यमेव जयते

प्रधान मंत्री

Prime Minister

MESSAGE

It is a pleasure to learn that the Fragrances and Flavours Association of India (FAFAI) is publishing a compilation - 'Indian Fragrances and Flavours Reference List of Ingredients'. The documentation of nearly 9, 000 ingredients is a remarkable initiative that will benefit the industry and people equally.

Richness of flora and specific geographical basis of various natural ingredients are India's strengths. Every region has huge reserve of plant extracts, natural oils, flowers, herbs and spices. These gifts of nature have multiple uses and applications across the manufacturing sector and have always been integral part of our daily life.

Our Government has been taking comprehensive measures to encourage indigenous products and produce. Powered by the collective resolve of 130 crore countrymen, we are marching ahead towards a strong and self-reliant India, where our local supply chains will be firmly integrated with the world economy.

The situation arising due to Corona pandemic has emphasized the requirement for innovation, creativity and skills. The way forward is 'vocal for local', which is not just a need but a responsibility.

The compilation of the ingredients' list will surely serve as an extensive reference document for the industry and the manufacturing sector.

Best wishes for all success of the publication.

(Narendra Modi)

New Delhi
श्रावण 29, शक संवत् 1942
20th August, 2020

Shri Rishabh C. Kothari
President, Fragrances and Flavours
Association of India
2- B, Court Chambers
35, Sir Vithaldas Thackersey Marg
Mumbai, Maharashtra- 400020

BMV FRAGRANCES (P) LTD

Resinoids | Absolutes | Super Absolutes | Essential Oils | Reconstitutions | Specialities

www.bmvfragrances.com

Address:

J- 44, 45 & 46, Surajpur Industrial Area, Site -V
Kasna, Gautam Budha Nagar, Greater Noida
Uttar Pradesh - 201308, India
Email: bmv@bmvfragrances.com
Telephone : +91 8800397839, +91 8800397840

Certificate No. U11131213

Certificate No. EU1654

Geranium production gets a boost under CSIR's 'Aroma Vision'

The production of geranium plant, which boasts of huge medicinal value and whose essential oil works as an anti-inflammatory and anti-septic agent, has got a boost under the government's 'Aroma Mission.'

The 'Aroma Mission' aims to bring additional area of land under cultivation of aromatic crops by interventions of CSIR and help in production of an additional 700 tonnes of essential oils for perfumery, cosmetics and pharmaceutical industries.

Scientists from Council of Scientific and Industrial Research – Central Institute of Medicinal and Aromatic Plants (CSIR – CIMAP), Lucknow have developed a new low-cost technology to prepare geranium saplings and make this available for the farmers too.

According to Dr. Saudan Singh, Project Head, CIMAP, till now the plant of geranium was saved in aerated glass house, but now with the development of the protective shed technology of the poly-house, it is prepared at a much cheaper cost on the farmers farm itself. In one acre around 4.000 saplings can be cultivated. For this, a 50-60 square metre poly-house has to be built that costs around Rs. 8-10 thousand.

"By this technology we can lower the cost of sapling production by Rs. 2 per sapling which earlier used to be Rs. 35. This can help farmers earn more with low input cost" said Dr. Singh.

Till now the plant was prepared from the saplings of geranium, but these used to be ruined in the rainy season. This made the plant material very expensive for the farmers.

According to Dr. Singh, CIMAP has started cultivation of geranium under the 'Aroma Mission' to promote it as an alternative to mentha.

Dr. Abdul Sameed, Executive Director, CIMAP, said that under the "Aroma Mission' the institute will be able to cultivate an area of about 50 hectares of plant material of geranium this year, which is expected help extract about 750 kgs of aromatic oil by June 2020.

"By selling this fragrant oil, farmers will be able to get immense benefits and their income will increase. Oil extracted from geranium plant is very valuable. A crop of just 4 months costs about Rs. 80,000 while the profits from this are upto about Rs. 1.50 lakhs. The average price of the oil in India is around Rs. 12-18,000 per litre," revealed Dr. Samad.

Geranium is originally a plant from South Africa. It is cultivated in Uttar Pradesh, Punjab, Haryana, Bihar, Himachal Pradesh and North Eastern regions. November is suitable for sowing and loamy soil is good for its cultivation.

HpicIndia, January, 2020

Saffron surge has Kashmir farmers smiling

Saffron prices are ruling steady this season while output has jumped almost three fold, bringing smiles back to farmers in Kashmir who cultivate the world's most precious spice.

Prices are now at Rs. 1.5 to 2 lakh per kilogram, almost on par with last year's rates when the crop was reduced to a third.

Apart from increased production, farmers in the valley have tapped direct linkages with buyers to avoid the distress sale that usually follows a high output season.

Owing to its quality, saffron grown in Kashmir sells at a premium over imported varieties, usually at twice the rates. Imported varieties from Iran and Afganisthan sell for Rs. 70,000 per kg.

"Kashmir's saffron is priced more as it is acclaimed for its higher potency of antioxidants like serotonin, crocetin, safranol and kaempferol than the imported varieties." Altaf Aijaz Andrabi, Director Agriculture, J&K said.

Farmers have harvested a better than average crop after two disastrous seasons, Andrabi said.

Beverage & Food World, January 2020

FSSAI reconstitutes Scientific committee and 19 Panels

FSSAI has recently reconstituted its scientific committee and 19 scientific panels. It has also constituted two scientific panels, comprising independent scientific experts, for providing scientific and technical advice and the development of standards for food products.

The scientific panels will be valid for a three year term, from January 1, 2020 to December 31, 2022. This is as per the terms of the provisions contained in Section 15 of the Food Safety and Standards Act, 2006.

Each of these scientific bodies will carry out work as per the provisions of the FSSAI orders.

The members of the scientific committee are Dr. Anura Kurpad, Professor, Department of Physiology; St. John's Medical College, Bengaluru; Dr. Chindi Vasudevappa, Vice-Chancellor, NIFTEM, Haryana; Dr. G.S. Totej, Additional Director General and Scientist H, Indian Council of Medical Research; Dr. K.S.M.S. Raghavarao, Director, CFTRI, Mysuru,: Dr. S. Ayyappan, Chancellor, Central Agricultural University, Imphal and Dr. Sanjay Kumar, Director, Institute of Himalayan Resource Technology, Palanpur.

The 19 scientific panels are on food additives, flavouring, processing aids and materials in contact with food; pesticides residues; genetically modified organisms and foods; functional foods, nutraceuticals, dietic products, and other similar products; biological hazards; contaminants in food chain; labelling claims and advertisements; method of sampling analysis, fish and fish products; milk and milk products, meat and meat products, including poultry; cereals, pulses, legumes, including bakery; fruits and vegetables, including nuts; oils and fats; sweets, confectionary, sugar, honey, water including flavoured, non-alcoholic beverages.

Some of the panel heads include Dr. D.N.A. Narayana, expert member, Indian Pharmacopeia Commission on Functional Foods, Nutraceuticals, Dietic Products, and other similar products. Dr. Bhupinder Singh, Principal Scientist, Nuclear Research Lab, Indian Agricultural Research Institute, New Delhi (who will lead the genetically – modified organisms and foods), and Dr. Anupama Singh, Head, Agricultural Chemicals Department IARI, New Delhi.

Food & Beverage News, January 2020

Sanitizers moved out of essential commodities list

Hand sanitizers and face masks are no longer be on the Essential Commodities List with effect from June 30th 2020, with the government deciding not to extend its earlier order of declaring them as essential commodities.

In a memorandum issued on July 1, 2020 to other ministries and government departments, the Ministry of Consumer Affairs and these products are being removed from the list of essential commodities as "there was no adverse reports from the States/UTs with respect to their price and availability"

"Therefore, the Department has decided not to continue these items as essential commodities under the EC Act, 1955, beyond 30th June 2020" it added.

It may be recalled that the government put face masks and hand sanitizers in the list of essential commodities in early March to ensure their availability and also to make sure manufacturers are not overcharging consumers. The government also took several proactive steps, including encouraging sugar mills and ethanol manufacturers to supply alcohol at reasonable rates to hand sanitiser makers.

hpicIndia, July, 2020

Premji Invest to acquire controlling stake in Best Value Chem

Vadodara based speciality aroma chemicals company, Best Value Chem (BVC), said Premji Invest will acquire a controlling stake in the company. The transaction involves the selling of stake by existing shareholders and commitment to infuse the primary capital for capacity expansion to meet increasing demand from its global customers, BVC, said.

With the backing of Premji Invest, BVC aims to "move up the value chain and consolidate our position in the Indian aroma chemical market," said Mr. C.O. Shaju, CEO, BVC. "India is at the tipping point of growth in manufacturing of speciality chemicals and aroma chemicals, in particular, due to favourable government policies fo "Make in India" and the creation of chemical parks. Recent supply chain disruptions in China, including events related to COVID 19 and an increase in domestic demand for end use applications, are acting as significant drivers of growth for the industry," Mr. Shaju said.

hpicIndia, July 2020

HUL, drops "Fair' from skincare range; L'Oreal also moves away from 'fairness'

FMCG major Hindustan Unilever Ltd. (HUL) is removing the word 'Fair' from its popular women's skin care brand 'Fair & Lovely', as part of rebranding excercise in the wake of growing voices against racial stereotypes.

HUL said the 'Fair and Lovely' was being rebranded as 'Glow and Lovely' and its skincare range products for men will be called "Glow & Handsome'.

On the heels of HUL's announcement, French Cosmetics Company L'Oreal also said it will remove the words whitening, lightening and fairness from all its skin care products.

HUL said its other skincare portfolio will also adopt a new holistic vision towards beauty that cares for everyone and celebrates all skin colours.

HUL's parent Unilever had announced the next step in the evolution of its skincare portfolio to "a more inclusive vision of beauty – which includes the removal of the words 'fair/fairness. 'white/ whitening', and 'light/lightening' from its products packs and communication.

Earlier, more than 11.000 people had signed a petition calling on Unilever to stop selling *Fair & Lovely,* marketed mainly in India and the Middle East. Commercial for the lotion have shown dark-skinned women using it to lighten their skin and then becoming more successful as a result. "This product has built upon perpetuated and benefitted from international racism and promotes anti-blackness sentiments amongst all its consumers," the petition has stated.

As part of the rebranding, HUL will also be announcing the new name for the 'Fair & Lovely' Foundation, set up in 2003 to offer scholarships to women to help to them pursue their education."The brand's vision is to adopt a holistic approach to beauty that cares for people, that must be inclusive and diverse – for everyone, everywhere. The brand is committed to celebrating all skin tones," it added.

Commenting on the move, Unilever President (Beauty & Personal Care) Mr. Sunny Jain said. "We recognise that the use of the words 'fair' 'white; and 'light' suggest a singular ideal of beauty that we don't think is right, and we want to address this. As we're evolving the way that we communicate the skin benefits of our products that deliver radiant and even tone skin, it's also important to change the language we use."

RCF launches hand cleansing gel

Rashtriya Chemicals and Fertilizers Ltd. (RCF) has introduced anisopropyl (IPA) based hand cleansing gel under the brand name 'RCF Saferola' to assist government in its effort to combat COVID 19. According to RCF, the gel is a skin friendly moisturiser based hand sanitizer which contains aloe vera extract and is enriched with vitamin-E.

- **Hpicindia, July 2020**

As demand for cosmetics slips, brands turn to skincare

Make-up and cosmetics are among categories that are facing a downturn during the pandemic, as consumers see no occasion or inclination to spend on them. Beauty and wellness brands such as Colorbar Cosmetics, Nykaa and L'Oreal India are, therefore, looking at other ways to stay relevant. Colorbar Cosmetics has pushed back the launch of

its colour cosmetics products, and has introduced a new range of skincare products. Nykaa has extended its skincare range by launching products under its private labels Nykaa Beauty and Nykaa Naturals. Brands are also launching clean beauty products to tap the growing consumer consciousness towards hygiene.

The beauty and wellness market in India, according to experts, is valued at Rs. 80,000 crore, of which cosmetics commands a 10-15% share. According to a Deloitte India report, amid the downturn for offline beauty stores (salons) due to COVID 19, the demand for in-home skincare is expected to increase. The report also predicts a rise in areas of demand including 'home make-up' 'mask make-up and contrast makeup.

Mr. Samir Modi, founder and MD, Colorbar Cosmetics, said a new order is emerging. "We consciously preponed our skincare product launches while postponing colour cosmetics. All our efforts are also directly linked with the fact that the skincare market is approximately five-times the size of the make up market now," he observed,

Industry experts are of the opinion that beauty and wellness brands are adopting this strategy only for the short term, and may go back to focusing on their core offerings, as the crisis subsides.

Mr. Pinakiranjan Mishra, partner and national leader, consumer products and retail, EY India, said it is only a matter of time before colour cosmetics make a come back.

The beauty and wellness market is expected to remain impacted in the long term, as touch and feel are important factors in this business, and recovery is unlikely until consumers start stepping out. Till then, Mr. Abheek Singhi, senior partner, BCG, said this strategy works well for brands. "Since most players operating in the segment have significant overlaps between skincare and cosmetics ranges, it makes sense for them to focus on one, while the other takes a beating," he added.

Hpicindia July 2020

Emami enters soap, hand wash categories under Boroplus brand

Emami has entered the soap and hand wash

categories by extending its second largest brand Boroplus into these segments. The company said this will help the brand and firm to reduce dependence on seasonality, which was currently the case with most of its brands.

According to Director, Ms. Priti Sureka, soap and hand wash categories have been growing over since the COVID pandemic with consumers focusing on personal hygiene. Hence, Emami decided to advance its foray into the segment by a year.

"*Boroplus* has a distinct advantage with its expertise in skin care, antiseptic and also moisturising capabilities. The brand in soaps in hand wash will focus on hygiene and antiseptic qualities as a differentiator with consumers too seeking such products," said Ms. Sureka.

Boroplus is Emami's second largest brand after *Navratna* with annual sales of about Rs. 500 crore. It has about 75% share in the antiseptic cream segment and was largely a winter brand through the company had earlier launched a face wash under it.

Emami had recently extended *Boroplus* into the

sanitiser segment and Ms. Sureka said more extensions are planned for this brand. "We want to reduce the seasonality factor in Emami and make some brands like *Boroplus* all-year round," she said.

Hpicindia July 2020

Bvlgari joins "Flower Gems of India' sustainability effort with Firmenich and Jasmine Concrete

Bvlgari, the Roman fashion brand known for its high-end jewellery, watches, fragrances, accessories and leather goods, has announced an ecological jasmine cultivation project dubbed 'Flower Gems of India' in collaboration with Swiss Fragrance supplier, Firmenich and its partner Jasmine Concrete, the largest floral extract exporter of India.

The goal of the programme is to implement a sustainable jasmine farming model in the floricultural area of Tamil Nadu.

The project has its base in two regions of Tamil Nadu wherein a new jasmine-farming floriculture models will be created with 100 family-owned farms. 'Flower Gems of India' will span over a period of three years from 2019 to 2021.

The initiative seeks to strengthen the social and economic well being of cultivators who would be offered a fixed price. The project will also offer farmers an alternative approach to jasmine cultivation based on organic farming methods, soil restoration, and rational water utilisation.

Bvlgari CEO Mr. Jean-Christophe Babin said it has become important to help communities that help in creating perfume masterpieces and develop a sustainable approach to preserving and supporting the local economy. 'Like jewellery, our fragrances are made from amazingly precious gifts, and we are passionately committed to exploring the extraordinary ingredients, accessing them and, as far as possible, supporting their production," he added.

Cycle Pure Agarbathies launches personalised incense range

Cycle Pure Agarbathies, the Mysuru-based manufacturer of incense and prayer products, has launched personalised custom fragrance – My Incense.

"Myincense is first of its kind offering which enables customers to customise every attribute of their incense to suit personal preference. The product aims to create a unique experience for consumers through hyper-personalisation," said Mr. Arjun Ranga, Managing Director, Cycle Pure Agarbathies.

"All aspects of the incense can be personalised - the shape of the stick, the fragrance and the intensity of the fragrance. The brand also lets you choose your own label and message on the package delivering a sense of ownership to the users," he added.

Available on Cycle.in, the brand offers customisation in four different categories: fragrance based, deity based, festival/occasion based and experience based.

"FMCG as an industry has been rooted firmly on the concepts of standardisation, mass manufacturing, and economies of scale. Also, conventional thinking always says that incense is a low involvement product for consumers. With Myincense, we intend to change this and cater to each individual's personal preferences," Mr. Ranga said.

- **Hpic india, February 2020**

MSME Minister Shri Nitin Gadkari Approves a New Scheme to Make India Aatmanirbhar in Agarbatti Production

Union Minister for MSME, Shri Nitin Gadkari has approved a unique employment generation program proposed by Khadi and Village Industries Commission (KVIC) to make India Aatmanirbhar in Agarbatti production. The programe named as "Khadi Agarbatti Aatmanirbhar Mission" aims at creating employment for unemployed and migrant workers in different parts of the country while increasing domestic Agarbatti Production substantially. The proposal was submitted to the Ministry of MSME for approval last month. The pilot project will be launched soon and on full-fledged implementation of the project, thousands of jobs will be created in the Agarbatti industry.

The scheme designed by KVIC on PPP mode is unique in the sense that in a very less investment. It will create sustainable employment and help private Agarbatti manufacturers to scale up Agarbatti production without any capital investment by them. Under the scheme, KVIC will provide Automatic Agarbatti making machines and powder mixing machines to the artisans through the successful private agarbatti manufacturers who will sign the agreement as business partners. KVIC has decided to procure only locally made machines by Indian manufacturers which also aims at encouraging local production.

KVIC will provide a 25% subsidy on the cost of the machines and will recover the remaining 75% of the cost from the artisans in easy installments every month. The business partner will provide the raw material to the artisans for making Agarbatti and will pay them wages on a job work basis. Cost of artisans training will be shared between KVIC and the private business partner wherein KVIC will bear 75% of the cost while 25% will be paid by the business partner.

Each automatic Agarbatti making machine makes approximately 80 kg Agarbatti per day which will provide direct employment to 4 persons. One Powder mixing machine to be given on a set on 5 Agarbatti making machines will provide employment to 2 persons.

The current job work rate for Agarbatti making is Rs 15 per kg. At this rate, 4 artisans working on one Automatic Agarbatti machine will earn minimum Rs 1200 per day by making 80 kg of Agarbatti. Hence every artisan will earn at least Rs 300 per day. Similarly on powder mixing machine each artisan will get a fixed amount of Rs 250 per day.

As per the scheme, the wages to the artisans will be provided by the business partners on weekly basis directly in their accounts through DBT only. Supply of raw material to the artisans, logistics, quality control and marketing of the final product will be the sole responsibility of the business partner. After recovery of the 75% cost the ownership of the machines will automatically by transferred to the artisans.

A two-party agreement to this effect will be signed between KVIC and the Private Agarbatti manufacturer for successful running of the project on PPP Mode.

The scheme has been designed in wake of the two major decisions – import restriction on Raw Agarbatti and increase in import duty on Bamboo Sticks taken by the Ministry of Commerce and Ministry of Finance respectively on the initiative of Shri Gadkari.

KVIC Chairman Shri Vinal Kumar Saxena said the two decisions of the Central Government created a huge employment opportunity in the Agarbatti industry. "In order to encash the huge employment generation opportunity, the KVIC designed a program namely " Khadi Agarbatti Aatmanirbhar Mission" and submitted to the Ministry of MSME for approval," Saxena said.

The program aims at handholding artisans and supporting the local Agarbatti industry. The current consumption of Agarbatti in the country is approximately 1490 MT per day. : however, India's per day production of Agarbatti is just 760 MT. There is a huge gap between the demand and the supply and hence immense scope for job creation.

ProcessWare ERP

www.ProcessWareERP.asia

...you could contain Manufacturing costs by having Customer Specifications tied with Production Formulas?

"The uniqueness of ProcessWare™ **ERP** is the focus the development team has put in understanding the nuances of the F&F industry. Features like Drum-off and customized menus offer tremendous flexibility for existing companies to adopt the change fairly seamlessly."

— Paolo George
CEO
Symega Flavours India (P) Ltd.

"With ProcessWare™ **ERP** team's honest and hardworking approach, we managed our implementation without any problem or inconvenience. I would highly recommend it to anyone in the F&F industry!"

— Mustafa Kemal Altinel
Business Development Executive
eps fragrances (Erdoğmuş Parfüm Sanayi)

Contact Us Now!

Harmander Singh Bindra - CEO
Mobile: +91 98300 34635
EMail: hsbindra@dipssindia.com

Dip Software Solutions Pvt. Ltd.
P-561, Lake Road
Kolkata 700 029

Member - IFRA North America

ifra
NORTH AMERICA

#1 Software Solution for the Flavors & Fragrance industry - ProcessWare™ ERP!

ARPAN AROMATICS

WE ARE PLEASED TO OFFER QUALITY PRODUCTS FROM OUR MANUFACTURING DIVISION

iso AMYL ACETATE	GERANYL ACETATE (MIN 98% / 2 PEAK)
iso AMYL BUTYRATE	GERANYL BUTYRATE
iso AMYL PROPIONATE	GERANYL ISO BUTYRATE
iso AMYL SALICYLATE	GERANYL FORMATE
BENZYL BUTYRATE	GERANYL PROPIONATE
BENZYL PROPIONATE	GERANYL ISO VALERATE
CARYOPHYLLENE ACETATE	GERANYL TIGLATE
CINNAMYL ACETATE	GUAIYL ACETATE
CINNAMYL FORMATE	HEXYL ACETATE
cis - 3 - HEXENYL ACETATE	HEXYL BUTYRATE
cis - 3 - HEXENYL BENZOATE	HEXYL ISO BUTYRATE
cis - 3 - HEXENYL BUTYRATE	NERYLACETATE
cis - 3 - HEXENYL ISO BUTYRATE	OCTYL ACETATE (C-8 ALCOHOL)
cis - 3 - HEXENYL CAPROATE	ORANGE OIL FOLDED (5X)
cis - 3 - HEXENYL ISO VALERATE	ORANGE OIL FOLDED (10X)
cis - 3 - HEXENYL PROPIONATE	ORANGE OIL FOLDED (20X)
cis - 3 - HEXENYL PHENYL ACETATE	PATCHOULI OIL (RCO)
cis - 3 - HEXENYL TIGLATE	PATCHOULI OIL (STANDARD)
cis - 3 - HEXENYL 2 METHYL BUTYRATE	PARA CRESYL ACETATE
CITRONELLYL ACETATE	PHENYL ETHYL ACETATE
CITRONELLYL BUTYRATE	PHENYL ETHYL FORMATE
CITRONELLYL CAPROATE	PHENYL ETHYL BUTYRATE
CITRONELLYL FORMATE	PHENYL ETHYL BENZOATE
CITRONELLYL ISO BUTYRATE	PHENYL ETHYL ISO BUTYRATE
CITRONELLYL PROPIONATE	PHENYL ETHYL TIGLATE
CITRONELLYL ISO VALERATE	RHODINOL (SYNTHETIC)
CITRONELLYL TIGLATE	RHODINOL (EX GERANIUM)
CLOVE OIL RECTIFIED 85%	RHODINYL ACETATE
CLOVE OIL PG	SANDAL BOOSTER
CLOVE TERPENES	TERPENYL ACETATE
DIHYDRO MYRCENYL ACETATE	TRANS 3 HEXENYL ACETATE
DMO ACETATE	TRANS 3 HEXENYL BENZOATE
EUGENOL	VETIVERYL ACETATE (ECO)
EUGENYL ACETATE	VETIVERYL ACETATE (ex HAITI)
FDL – 40	WOODAMBER

14, Maskati Market, Kalupur, Ahmedabad - 380002.
Tel. : +91 79 2217 3788 Telefax : +91 79 2216 5160.
web : www.arpanaromatics.com
e-mail : arpanaromatics@yahoo.co.in
e-mail : info@arpanaromatics.com

ARPAN AROMATICS

WE ARE PLEASED TO OFFER QUALITY PRODUCTS FROM OUR MANUFACTURING DIVISION

RESINOIDS & CONCRETES

AMBERGRIS SOLID
BENZOIN CONCRETE
BENZOIN SIAM CONCRETE
CIVET CRYSTAL
RESINOID BENZOIN
RESINOID BENZOIN ECO
RESINOID ELEMI
RESINOID LABDANUM
RESINOID OLIBANUM

SCHIFF BASES

AURANTINE	(HYDROXY CITRONELLAL)
CINNAMON TINE	(CINNAMIC ALDEHYDE)
CITRO TINE	(CITRONELLAL)
CIVE TINE	(SKATOLE)
COCONUT SCHIFF	(ALD C-18)
FLORO TINE	(ALDEHYDE C - 12 MNA)
HEXA TINE	(HCA)
HYCINTH TINE	(PHENYL ACETALDEHYDE 50%)
INDOLENE	(INDOLE)
JASMO TINE	(ALPHA AMYL CINNAMIC ALD)
UNDECA TINE	(ALD C – 11)

-: CONTACT :-

14, Maskati Market, Kalupur, Ahmedabad - 380002.
Tel. : +91 79 2217 3788 Telefax : +91 79 2216 5160.
web : www.arpanaromatics.com
e-mail : arpanaromatics@yahoo.co.in
e-mail : info@arpanaromatics.com

GIRISH ENTERPRISE

JN 1779 JEAN NIEL

AUTHORISED AGENTS AND DISTRIBUTORS FOR JEAN NIEL PRODUCTS, PERFUMERY COMPOUNDS AND RAW MATERIALS

DEALERS IN

A Indian Products

1	Citronella Oil	8	Virgin Coconut Oil
2	Lemon Grass Oil	9	Petitgrain Oil
3	Palmarosa Oil	10	Rosemary Oil
4	Geranium Oil	11	Cedarwood Oil
5	Basil Oil	12	Tea Tree Oil
6	Eucalyptus Oil	13	Saffron RC
7	Tagete Oil	14	Neroli Oil

B Indonesian Products

1 Patchouli - Sulawesi Minimum 30% & Minimum 27%

2 Vetiver Oil

C Italian Products

1 Bergamot Oil
2 Lime Oil
3 Orange Oil
4 Lemon Oil
5 Yellow, Red and Green Mandarin Oil

D Bulgarian Products

1 Rose Water Edible (water soluble) 100% pure and natural

2 Rose Oil 100% pure and natural

E Specialised Quality of

1 Precious Wood Extra
2 Civet RCO
3 Osmanthus T ABS
4 Cardamom 347
5 Ambreine
6 Castoreum Base
7 Castoreum T ABS

F Australia

1 Tea Tree

G Madagascar

1 Vanilla Beans - Green and Black

GIRISH ENTERPRISE

1st Floor, Room No. 13, Mani Bhuvan, 9, P Athak Wadi, Princess Street, Mumbai 400002.
Contact Office: 22013385; 22013384 Email Id - Info@girishenterprise.in, Viraat@girishenterprise.in

SOLIR GROUP

1st Floor, Gala No. 43, Mahavir Industrial Estate, Sakinaka, Andheri East, Mumbai-400072.
Contact Office - 28501120 / 28501110 Mobile: Viraat Vajani 9820959540.

GIRISH ENTERPRISE

JN 1779 JEAN NIEL

AUTHORISED AGENTS AND DISTRIBUTORS FOR JEAN NIEL PRODUCTS, PERFUMERY COMPOUNDS AND RAW MATERIALS

Products now available in Flexible, Small and Bulk packing.

1. **Vanillin**
2. **Linalool**
3. **Linalyl Acetate**
4. **Tea tree oil Australian**
5. **Geranium oil Chinese**
6. **Citronella oil**
7. **Lemongrass oil**
8. **Rose water organic Bulgarian**

GIRISH ENTERPRISE

1st Floor, Room No. 13, Mani Bhuvan, 9, P Athak Wadi, Princess Street, Mumbai 400002.
Contact Office: 22013385; 22013384 Email Id - Info@girishenterprise.in, Viraat@girishenterprise.in

SOLIR GROUP

1st Floor, Gala No. 43, Mahavir Industrial Estate, Sakinaka, Andheri East, Mumbai-400072.
Contact Office - 28501120 / 28501110 Mobile: Viraat Vajani 9820959540.

Global Essential Oils market set for strong growth: to cross $ 15.62 bn 2026

According to a new report on the global essential oils market published by Allied Market Research, the market was valued at $8 bn in 2018 and is expected to grow at a CAGR of 8.7% to reach $15.62 bn in 2026.

Essential oils are distinguished from fatty vegetable oils, such as canola and sunflower, by the fact that they evaporate or volatise in contact with the air and usually possess a strong aroma. These products are complex mixtures of organic chemicals, the nature and relative proportions of which are determined by the genetics of the plant species, environmental factors (e.g climate), agricultural factors (e.g. soil conditions, nutrition, time and conditions of harvesting and methods of post-harvest handling) and manner of extraction.

Essential oils find usage in perfumes, cosmetics, soaps and various other products, for flavouring food & drink, and for adding scents to incense and household cleaning products. In 2018, based on application the food and beverages segment held the highest share, accounting for nearly four-fifth of the global market share, the report revealed. However, the cleaning and home segment is expected to witness fastest growth through the forecast period.

The report classifies the essential oils market on the basis of product type as orange, eucalyptus, corn mint, peppermint, citronella, lime, lemon, clove, spearmint, and others. The orange segment was the most prominent category in 2018, contributing around $3 bn to the total market and is estimated to reach $6.2 bn by 2026, growing at a CAGR of 9.3% during the forecast period.

The essential oil market is driven by the impending requirement of introducing natural elements to treat diseases and for high nutrition diets, mandated by many global regulatory authorities. Moreover, the market growth is largely influenced by the advent of novel usage of this oil in various applications such as flavour & fragrance, aromatherapies, and others. Furthermore, healing benefits are expected to be instrumental in governing peak sales and market penetration of market-approved essential oils.

Chemical Weekly, February 25, 2020

Aroma Chemicals Market set to grow at a CAGR of 6% till 2027 - Report

A new market research analysis by Transparency Market Research has valued the global aroma chemicals market at around $4.6 bn, and predicted it to reach $7.8 bn by the end of 2027 driven by the rise in the demand from end-use sectors like personal care and household care products.

Aroma chemicals are key raw materials for fragrances and odourants are usually obtained from essential oils and aromatic compounds. They are synthetic or natural compounds characterised by their pleasant smell.

Fragrance and Perfume manufacturers are striving to innovate and offer superior products to gain competitive advantages in the rapidly growing personal care products market. This is anticipated to boost the industry during the forecast period, thereby propelling the aroma chemicals market.

In terms of source, the synthetic segment dominates the global aroma chemicals market due to its characteristics to replace any natural aroma, and also ease of availability. However, the natural segment is anticipated to expand at a significant pace during the forecast period.

In terms of product, the benzenoids segment led the market in 2018, due to their excellent properties to replicate the natural aroma and superior mixing properties with other chemicals. Ease of availability is another factor that is driving this segment. However, the terpenoids segment is projected to expand at a rapid pace during the forecast period. Terpenoids can be derived from natural sources such as plants and flowers. Thus, rise in the demand for natural products is likely to fuel the terpenoids segment during the forecast period.

In terms of value, Europe constituted a prominent share of the global aroma chemicals market in 2018. However, the market in Asia Pacific is projected to expand at a rapid pace during the forecast period.

Focus on Technology

Perfumers in the aroma chemicals landscape are developing new aroma ingredients by repurposing technologies and molecules through large chemicals inventories. Thus, emerging aroma ingredients are creating space for better price performance ratios and distinctive olfactory profiles.

The market is undergoing significant transformations as a result of innovative chemistries and thorough knowhow of flavours and fragrances. Strategic collaborations have led to the unfolding of new-to-the-world fragrances (synthetic fragrances and extracts from flowers, fruits, mosses and spices) in the aroma chemicals industry. One such aspect about the industry is the introduction of AI (Artificial Intelligence) for fragrance product development. AI has enabled the development of newer, safer and greener molecules in the aroma chemicals landscape.

In October 2018, Germany's Symrise announced a collaboration with IBM Research to develop Philyra, a project that will use AI to help perfumers make productive and high precision designs that are predicted based on novel combinations.

The aroma chemicals market is highly consolidated with the top four players holding more than 55% share of the total market. Prominent players operating in the market include Givaudan, Symrise, IFF, Firmenich, Takasago, BASF, Kao etc.

Chemical Weekly January 21. 2020

Global bio-based cosmetics and personal care ingredients market to reach $5.25 bn by 2029

According to a new market report by BIS Research, the bio-based cosmetics and personal care ingredients market was valued at $ 3.10 bn in 2018 and is projected to reach $5.25 bn by 2029, growing at a CAGR of 5.19% during the period.

This growth of the market is supported by the growing consumer consciousness for bio-based cosmetics, wherein consumers are avoiding chemicals such as sodium lauryl sulphate, parabens, and phthalates, due to rising concern about associated health risks. This has led to number of cosmetic companies replacing synthetic chemicals with bio-based ingredients.

Furthermore, increasing disposable income in developing countries such as China, India, Brazil and countries in Southeast Asia, and shifting focus toward male-specific products are expected to create new opportunities in the market.

"The introduction of bio-based ingredients in several industries such as food and beverage, pharmaceuticals, and cosmetics has transformed the manufacturing landscape since 2000. The growing consumer inclination toward the adoption of bio-based products due to rising health and environmental concerns is expected to drive the market," added Mr. Sanyam Tetarwal, Lead Analyst at BIS Research.

The report highlighted the dominance of North America in the biobased cosmetics and personal care ingredients market with a share of 45.02% in 2019, while in terms of product type emollients dominated the market and is anticipated to maintain its dominance throughout the forecast period (2019-2029).

Hpicindia, February 2020

Symrise to open innovation centre at Dutch Unilever facilities

German fragrance and industry solutions group, Symrise, is set to expand its research facilities after installing an innovation lab at the Unilever Foods Innovation Centreat Wageningen Campus in the Nethrelands. The company said the collaboration will help development of innovative culinary foods, including snacks ranges, at an increased rate.

The newly commissioned creative centre is set to comprise a flavour creation lab, an application kitchen and collaboration rooms that cover 120 square meters. It will enable the business to enhance its market understanding and deliver against its customer's needs.

"This approach will enable the companies to optimally integrate and develop new products together in a creative and efficient manner," said Mr. Heinrich Schaper, President Flavour Division at Symrise. "Furthermore, the size will make it possible for us to leverage the expertise of the best agri-agro researchers from around the world."

Wageningen University and Research is recognized globally as the top institution for education and research in the areas of agriculture and nutrition, in which it possesses a rich hundred-year tradition. Over 5,000 scientists and 12,000 students are dedicated to studies in the agro-food and environmental domain. Employees of Symrise will also lecture at the university, and students will be invited for exchanges at Symrise's headquarters in Holzminden (Germany).

"We are thrilled about the idea of cooperation and direct knowledge exchange. Having the resources and expertise of a global leader, such as Symrise located right at our site enables us to work even better together on the transformational journey towards a food system that is better for you and for the planet. It's a first proof point of how we envisage working together with partners in an ecosystem. Consumers can look forward to very unique taste experiences," noted Mr. Manfred Aben, Vice President R & D and Head of the Foods Innovation Centre at Unilever.

Symrise aims at working together with Unilever on many different levels. In addition to taste, sustainability ranks high on the Agenda of both companies. This new, on-site approach to integrated product development allows for more scientific collaboration on the field of sustainability, the companies stated.

Symrise's Cosmetic Ingredients business underlines changing beauty norms with new branding

Germany's Symrise is positioning itself as a responsible producer of cosmetic ingredients with a modern branding campaign that communicates changing beauty ideals.

"Beauty today is more diverse than ever," noted Dr. Daniel Ibarra, Vice President, Global Marketing, Symrise Cosmetic Ingredients. "The focus has shifted to encompass character and values, individuality and a sense of self-worth. Beauty shows so many facets. For us it means feeling comfortable in one's own skin." He added.

Symrise's cosmetic ingredients division said it is taking a stand to promote diversity in beauty with choice of its new brand ambassador – Ms. Domitila Barros, a Brazilian activist, entrepreneur and model.

The division said its concepts and product solutions

are designed to meet contemporary forward-thinking concept of beauty. "We take a holistic approach to the concept of beauty and we unite the best of nature, science and technology, harnessing the results to develop truly outstanding solutions for beauty and personal care," said Dr. Ibarra.

Originally, the company planned to present the campaign at the In-Cosmetics trade fair in Barcelona, which was postponed due to the COVID 19 pandemic. The company presented the campaign online on 1st July.

Symrise and France's CRIEPPAM announce Lavender farming research pact

German fragrance and fragrance major, Symrise, is launching a joint research project with France's research institute, CRIEPPAM on lavender farming aimed at crop resilience, improved biodiversity and additional income for farmers in the Provence of France.

To improve biodiversity and soil health, farmers use inter-cropping methods to benefit the lavender and lavandin fields. The project of CRIEPPAM and Symrise will identify the best inter-cropping options in lavender farming. It will at improving biodiversity, increasing quality and yields of lavender and lavandin essential oils. The project will also provide additional income for farmers.

The inter-crops investigated will range from cereals to aromatic herbs, which grow well in the Mediteranean climate. In addition, the project will focus on developing practical agro-ecological techniques, which support biodiversity and inter copping such as new harvesting techniques and devices.

The project will last three years with CRIEPPAM reporting annual progress to symrise, CRIEPPAM, local farmers and Symrise have already been working towards increasingly cultivating lavender in a sustainable way for several years.

HpicIndia, July,2020

Givaudan to Acquire Ungerer

Givaudan has announced that it is acquiring U.S. based Ungerer & Company, which offers flavours, fragrances and specialty ingredients. Terms of the deal were not disclosed, in 2018, Ungerer's business generated about $250 million in revenue. The transaction is expected to close in Q1 2020.

Ungerer was the original publisher of the *American Perfumer*, an early precursor to *Perfumer & Flavorist*. The company was founded more than 125 years ago and has a presence in more than 60 countries. It operates 8 manufacturing sites and 6 R & D facilities and employs 650.

"The acquisition of Ungerer fits very well with our long term strategy for our core business in flavors and fragrances," said Gilles Andrier, Givaudan's CEO."They have an excellent reputation in the market, thanks to the quality of their specialty ingredients as well as their strong position in the fast growing local and regional customer segment. We have great respect for the company and are very confident that the acquisition will further enhance our industry leadership, both through the vertical integration into key specialty ingredients for our flavour and fragrance creations, as well as in asserting our leadership with local and regional customers. We look forward to welcoming the Ungerer employees to the Givaudan family."

"I am very proud of all that Ungerer has accomplished throughout its 125 years as an independent company and we are confident that the company will continue to flourish as part of Givaudan." Said Ungerer's controlling owner Barbara Voorhees. "We believe that we have a strong set of shared values with Givaudan and that this transaction represents a very positive step for Ungerer's customers and employees. I know that my late husband Gary Voorhees would be immensely satisfied to see the company that he led with integrity for many years join forces with the industry leader, Givaudan."

- Perfumer & Flavorist, January 2020

CPL Aromas consolidates expertise in Natural Fragrances in new platform

UK based fragrance house, CPL Aromas, has announced a new strategy to meet the growing need for clarity in creating natural fragrances.

In recognition of the fact that defining 'natural' is not as simple as it sounds. CPL aromas has consolidated the Group's natural perfumery experience, marketing knowledge and regulatory expertise into a new 'naturals' platform.

The platform is a classification system by which CPL can work with clients to establish what they require from natural ingredients. "It provides a practical means of creating 100% natural fragrances, backed by advice and informed choice, ensuring that customers' marketing requirements take the lead in every project," the company informed.

"The natural market is often driven and confused by vague claims and a glossary of terms that doesn't have official industry recognition or firm definition. By consolidating our marketing, regulatory, raw materials and creative expertise in this way we can help our customers navigate the 100% natural fragrance market and make informed choices about the appropriate fragrance materials to support the product claims they wish to employ," explained Ms. Angela Stavrevska, CPL's Global Marketing and Brand Director.

The company added that a supporting thread to this initiative is the classification of each of the natural raw materials and natural aroma-chemical materials through three tiers – Naturalsource, Naturalcore, and Naturalpure.

Chemical weekly, December 17, 2019

Takasago opens first flavours and fragrance factory in Indonesia

Japan's Takasago has opened its first flavours and fragrances factory in Indonesia as it looks to expand in Asia. The $25mn capital investment is Takasago's biggest in the country.

The facility, located at the GIIC Industrial Park in Indonesia's West Java Province, is built on nearly 16,000 square meters of land and has become Takasago's 12th plant for flavours and fragrances production worldwide. This factory will serve the South East Asia market with up to 14,500 tpa of capacity.

The factory builds on Takasago's global presence, with 26 facilities worldwide including in the US, Brazil, China, Germany, India, Japan, Madagascar, Mexico, Morocco and Singapore. "The new factory will serve as one of our three-base production system in the South and Southeast Asian Region" the company informed.

Chemical Weekly, December 31, 2019

Firmenich, MG International announce Joint Venture

Firmenich has announced the establishment of a joint venture with MG International Fragrance Company.

MG International's founding Gulcicek family will remain significant shareholders, and the company will maintain its brand name (while operating as a member of the Firmenich group). Financial terms of the transaction, which is expected to close in early 2020, have not been disclosed.

Firmenich CEO Gilbert Ghostine stated: "With our combined capabilities, Firmenich and MG International will now offer winning fragrance solutions and exemplary service for regional and mid-size local customers across Turkey, the Middle East, North Africa, Eastern Europe and the greater 'Stans' . Our new partnership will combine unrivalled innovation and technology with deep local customer intimacy and consumer understanding, as well as giving us a strong supply chain base for faster speed-to-market across the region."

"As an independent, family owned business for 58 years, we are honoured to partner with the world's largest privately held fragrance and flavour company," added Misel Gulcicek, founder and Chairman, MG International Fragrance company. "Firmenich is a true industry leader in both creativity and responsible business; we look forward to combining our artistry, innovation and technology to create positive emotions together."

Perfumer & Flavorist. January 2020

Firmenich offers tool to quickly assess green chemistry credentials of its perfumery Ingredients

Firmenich, the swiss perfumer and taste company, has unveiled a new proprietary tool, 'Ecoingredient Compass', that enables immediate assessment of the company's fragrance molecules through the lens of green chemistry.

The tool provides unique insights into the renewability, biodegradability and green chemistry properties at Firmenich's perfumery ingredients.

"Driven by the growing trend for more sustainable lifestyles, consumers are demanding to know what is inside their product," said Mr. Julien Firmenich, VP Product Strategy and promotion. "Ecoingredient Compass is a breakthrough in ingredients transparency, as it gives on customers the sustainability information that they need to shape products that have a lasting positive impact."

For more than 20 years, Firmenich has applied green chemistry principles throughout its research processes. Green chemistry is designed to maximise efficiency and minimise hazardous efforts on human health and the environment. The 'EcoIngredient Compass' analyses and scores an ingredient in the three areas of renewable carbon, biodegradability and green chemistry.

Firmenich is including these three parameters in its ingredients sales catalogue for all of its fragrance molecules.

The company said the creation of 'Ecoingredient Compass' reinforces its leadership in white biotechnology and green chemistry- the development and production of ingredients with minimal impact on nature and people.

hpcIndia, July 2020

IFF to merge with Dupont's nutrition business

US based International Flavours & Fragrances (IFF) has announced that it will merge with DuPont's nutrition & biosciences unit in a deal that will create a new consumer giant valued at more than $45 bn.

Under terms of the agreement, Dupont shareholders will own 55.4% of the shares of the new company and existing IFF shareholders will own 44.6%, IFF said in a statement. Dupont will also receive a one-time-cash payment of $7.3 billion upon closing of the deal, IFF added.

The new company will continue to be called IFF and based in New York. IFFs CEO Mr. Andreas Fibig will run the combined company and will also continue to be Chairman of the board.

The combination will be executed using a tax-efficient structure called a Reverse Morrris Trust, IFF said. Such transactions let a company avoid a big tax bill by spinning off a unit that it wants to divest and simultaneously merging it with another company.

The combination of the two entities creates a global giant in high value ingredients and solutions for food and beverage, home and personal care and health and wellness markets, with estimated 2019 proforma revenue of more than $ 11bn. The complementary portfolios will give the company leadership positions across key taste, texture, scent, nutrition, enzymes, cultures, soy proteins and probiotics categories.

“With highly complementary portfolios, we will have global scale and leding positions in key growth categories,” Mr. Fibig said.

Dupont became a stand-alone company this year following the breakup of DowDuPont Inc. Dow and DuPont agreed to merge in 2015 and have since completed a plan, laid out then, to split into three companies. DowDuPont’s materials-science business is now Dow Inc and its agriculture business is Corteva Inc. DuPont is the speciality-sciences portion. Dupont’s Nutrition and Biosciences unit made up 28% of the company’s revenue in the first nine months of the year. The deal values DuPont’s nutrition division at around $26 bn.

- **Hpicindia, December, 2019**

US fragrance industry body launches digital resource for public

Fragrance Creators Association, which represents the US fragrance industry, has launched the website *FragranceConservatory.com* designed to teach people about fragrance.

The digital space is designed to help people learn about fragrance and make informed and confident choices about the scented products they use every day. At a time of growing public interest in fragrance and fragrance ingredients, this resource provides engaging and science-based content on everything from how fragrances are created to the basics of fragrance safety, as well as custom ingredient stories.

The Fragrance Conservatory empowers users to search ingredients to understand their use and safety; learn about the history and science behind making a fragrance; discover the many wellness benefits of fragrance; and follow the fragrance industry’s efforts to promote public health.

“The Fragrance Conservatory is uncompromising in its pursuit of quality information and uses creative and innovative design to illuminate the power of fragrance to enhance lives, bring people together and drive positive, sustainable change for people and the planet,” said Ms. Farah Ahmed, President & CEO, Fragrance Creators. “Now for the first time, the fragrance industry is sharing its story to help people better understand fragrance safety, creation, and the crucial role it plays in our lives.”

The website was developed by a coalition of members companies including Chanel, Estee Lauder companies. Firmenich, IFF, Jhonson & Jhonson, Procter & gamble, Revlon and Takasago International Corporation (USA).

- **Hpicindia, December 2019**

Butylparaben included in ECHA’S hazardous chemicals list

The European Chemicals Agency (ECHA) has added butylparaben (butyl-4-hydroxybenzoae) – an ingredient used for its antimicrobial properties

in cosmetics and personal care products – to its 'Candidate List' of Substances of Very High concern (SVHCs) because of its endocrine-disrupting properties.

Companies importing or producing products containing the chemical now have six months to notify the agency. Any supplier of articles containing a "Candidate List' substance above a concentration of 0.1% weight by weight has to give sufficient information to their customers and consumers to allow safe use.

Butylparaben was among the four new hazardous chemicals added to the 'Candidate List' on June 25. The other three chemicals – 1-vinylimidazole, 2-methyllimidazole and dibutylbis (pentane-2,4 dianato-O,O') tin-used in industrial processes to produce polymers, coating products and plastics, respectively, were found to be toxic to reproduction.

The 'Candidate List' now contains 209 substances that may have serious effects on people or the environment. These may be placed on the "Authorization List' in the future, which means that industry would need to apply for permission to continue using them.

"Chemicals on the Candidate List are among the most regulated in the EU and our aim is to gradually phase them out." Noted Ms. Christel Musset, ECHA's Director of Hazard Assessment. "In the meanwhile companies need to ensure their safe use and be transparent towards consumers who have the right to know where these chemicals are used. Substituting them with safer alternatives can boost innovation and create a more sustainable circular economy," she added.

From January 2021, companies will also need to notify in ECHA's upcoming SCIP (Substances of Concern in articles as such or in complex objects (Products) database if their articles contain 'Candidate List" substances. The database, ECHA said, aims to ensure transparent information on products containing hazardous chemicals throughout the entire lifecycle, for both waste operators and consumers.

hpicIndia, July 2020

The Fine Fragrances Boutique

Explore • Experience • Express

Discover exciting uses of IFF Iso Cyclo Geraniol

Explore
over 300 top
quality ingredients

Experience
their odor profiles
in accords

Express
in your own creations
with technical support from us

iff
International Flavors & Fragrances Inc.
Authorised Distributor

Lmr
NATURALS BY IFF
Sole Authorised Distributor

symrise
Sole Distributor of terpene based ingredients
Linalool, Linalyl Acetate, Geraniol & Nerolex

Estd 1980

FINE FRAGRANCES PVT. LTD.

Leading Distributors and Suppliers of High Quality Natural & Synthetic Perfumery & Flavor Ingredients,
Reconstitutes and Fragrance compounds.

119, Jolly Maker Chamber No. 2, 11 th Floor, Nariman Point, Mumbai 400 021, INDIA
Tel.: + 91 22 61454000, Email : sales@finefrag.com, web : www.finefrag.com

The Fine Fragrances Boutique

Explore • Experience • Express

Visit us to explore our wide range of IFF speciality ingredients

iff
International Flavors & Fragrances Inc.

AMBER

- AMBER XTREME
- AMBERMOR-EX
- AMBRINOL 95%
- BORNAFIX
- CASHMERAN
- GRISALVA
- TRISAMBER

CITRUS

- CLONAL
- DIMYRCETOL
- GERALDEHYDE
- HERBALIME (ABBAROME)
- KHUSINIL
- LIMOXAL
- MYRCENOL SUPER

FRUITY

- ALPHA DAMASCONE TOCO
- BETA DAMASCONE TOCO
- DELTA DAMASCONE
- FRAISTONE
- HEXALON
- NECTARATE
- PRENYL ACETATE
- STRAWBERIFF

GREEN

- GALBASCONE
- ISO CYCLO CITRAL
- LIFFAROME
- MELOZONE
- MONTAVERDI
- SYVERTAL
- TRIPLAL
- VERTOLIFF

HERBAL

- APO PATCHONE
- CANTHOXAL TOCO
- FLEURANIL
- ISO BUTYL QUINOLENE (IBQ)
- OCIMENE

MUSK

- APPLELIDE
- CELESTOLIDE
- EDENOLIDE
- GALAXOLIDE 50 DEP
- GALAXOLIDE UNDILUTED
- ZENOLIDE

FLORAL

- ACALEA
- AQUAFLORA
- CYCLEMAX
- DAMASCOL
- DIOLA
- FLEURAMONE
- FLORAL SUPER
- FLORALOZONE
- HELIONAL
- HYACINTH BODY
- HYACINTH BODY NO.3
- JASMAL
- JASMELIA
- JESSEMAL
- KHARISMAL S
- LYRAL
- MELAFLEUR
- MUGUET ALDEHYDE 50
- PEOMOSA
- PHENAFLEUR
- PHENOXANOL
- ROSETHYL
- VIOLIFF

WOODY

- BACDANOL TOCO
- CEDRAMBER
- CEDRYL ACETATE
- ISO E SUPER
- KARMAWOOD
- KOAVONE
- KOHINOOL
- METHYL CEDRYL KETONE SG
- ORIVONE
- SANJINOL TOCO
- TIMBERSILK
- TOBACOROL
- TRIMOFIX
- VERTOFIX COEUR
- VERAMOSS

FRESH

- INTERELEVEN ALDEHYDE
- PINO ACETALDEHYDE
- PRECYCLEMONE B

POWDERY

- BICYCLONONALACTONE

SPICY

- PRISMANTOL
- ISO CYCLO GERANIOL

Estd 1980

FINE FRAGRANCES PVT. LTD.

Leading Distributors and Suppliers of High Quality Natural & Synthetic Perfumery & Flavor Ingredients,
Reconstitutes and Fragrance compounds.

119, Jolly Maker Chamber No. 2, 11 th Floor, Nariman Point, Mumbai 400 021, INDIA
Tel.: + 91 22 61454000, Email : sales@finefrag.com, web : www.finefrag.com

The Fine Fragrances Boutique

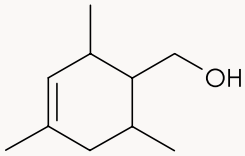
Explore • Experience • Express

Discover exciting nuances of Iso Cyclo Geraniol

ISO CYCLO GERANIOL

SPICY
Spicy, Floral, Woody

$C_{10}H_{18}O$



Inspirational All Purpose Cleaner with Iso Cyclo Geraniol

Floral	Citronellol 950	IFF	2.50
	Geraniol 980	IFF	3.30
	Phenyl Ethyl Alcohol		6.65
	Phenyl Propyl Alcohol		0.50
	Ylang III Oil	LMR	0.85
Spicy	Cinnamic Alcohol		4.14
	Iso Cyclo Geraniol	IFF	66.30
Balsamic	Benzyl Salicylate		13.26
Fougère	Heliotropine		2.50
		TOTAL	100.00

This harmony was dosed at 0.2%.

What Does the Sense of Clean Mean to You ?

#SenseofCleanxIFF

Iso Cyclo Geraniol

Place your phone scanner on bar code to open link.
Discover “a new sense of clean”

UNCOMMON SCENTS

FINE FRAGRANCES PVT. LTD.

Leading Distributors and Suppliers of High Quality Natural & Synthetic Perfumery & Flavor Ingredients, Reconstitutes and Fragrance compounds.

119, Jolly Maker Chamber No. 2, 11 th Floor, Nariman Point, Mumbai 400 021, INDIA
Tel.: + 91 22 61454000, Email : sales@finefrag.com, web : www.finefrag.com

The Fine Fragrances Boutique

Explore • Experience • Express

Discover Pure, Natural & Sustainable ingredients from IFF LMR

AMBER

- CISTE ABS BLO
- CISTE ABS COLORLESS
- LABDANUM RES BLO
- LABDANUM RESINOID 45 PCT TEC BLO

GOURMAND

- PERU BALSAM OIL
- TONKA BEAN ABS
- VANILLA BOURBON CO2 EXTRACT 35% TEC

MUSK

- AMBRETTE ABS*

BALSAMIC

- BENZOIN RESINOID SIAM 50 PCT PG BLO
- BENZOIN RESINOID SAIM BLO
- MYRRH OIL LMR *
- MYRRH RESOID 65PCT TEC BLO
- OLIBANUM OIL *
- OLIBANUM RESOID *
- STYRAX RESOID LOW STYRENE BLO

FRUITY

- BLACKCURRANT BUD ABS MD 37% TEC LMR FLG
- BLACKCURRANT BUDS ABS *
- BRAN ABS *
- BRAN RESINOID LMR
- DAVANA OIL SFO *

FLORAL

- BROOM ABS ITALY LMR FRG *
- CASSIE ABS EGYPT LMR *
- GERANIUM OIL EGYPT *
- GERANIUM OIL EGYPT FOR LIFE *
- GERANIUM OIL EGYPT ORG LMR
- GERANIUM OIL CHINA *
- GERANIUM OIL MADAGASCAR *
- JASMINE ABS EGYPT *
- JASMINE ABS INDIA *
- JASMINE ABS SAMBAC INDIA *
- MAGNOLIA FLOWER OIL
- MIMOSA ABS FRANCE
- ROSE ABS BULGARIAN LMR *
- MAGNOLIA LEAF OIL
- MIMOSA ABS INDIA LMR
- NARCISSE ABS FRENCH
- NEROLI OIL TUNISIA
- ORANGE FLOWER ABS TUNISIA *
- ORANGE FLOWER WATER ABS TUNISIA *
- ORRIS 8% NAT 2942C *
- ORRIS NATURAL 15% 4095C *
- ORRIS RESOID *
- OSMANTHUS ABS LMR *
- PETITGRAIN BIGDE OIL TUNISIA *
- PETITGRAIN CITRONNIER OIL *
- PETITGRAIN OIL PARAGUAY T'LESS
- ROSE CENTIFOLIA ABS TUNISIA LMR
- ROSE ABS BULG LOW METH EUG LMR
- ROSE ABS TURKISH *
- ROSE ABS ISPARTA FOR LIFE TURKISH
- ROSE ESSENTIAL LMR FOR LIFE *
- ROSE ESSENTIAL LOW ME FOR LIFE
- ROSE OIL TURKISH *
- ROSE OIL BULGARIA *
- ROSE ULTIMATE EXTRACT LMR FOR LIFE
- TAGETE OIL MADAGASCAR *
- TUBEROSE ABS INDIA
- YLANG YLANG OIL COMPLETE MADAGASCAR *
- YLANG OIL I MADAGASCAR
- YLANG OIL III MADAGASCAR

GREEN

- BASIL ABS GRAND VERT LMR *
- BASIL OIL GRAND VERT LMR(EGYPT) *
- BASIL OIL VERVEINA *
- GALBANUM OIL *
- GALBANUM RESOID *
- VIOLET LEAF ABS EGYPT *

HERBAL

- ARMOISE OIL PURE
- BASIL OIL VIETNAM LMR *
- CHAMOMILE OIL ROMAN *
- CYPRESS OIL
- CHAMOMILE OIL WILD LMR
- CHAMOMILE OIL BLUE LMR
- HAY ABS
- IMMORTELLE ABS BALKANS LMR *
- LAVENDER ABS H *
- LAVENDER OIL BULGARIA *
- IMMORTELLE OIL LMR
- LAVENDER OIL FRANCE MT *
- LAVANDIN ABS H *
- LAVANDIN ABS ENFLEURAGE 2.0 ORG LMR
- LAVANDIN HEART *
- ROSEMARY OIL TUNISIA BLO
- SAGE CLARY ABS FRANCE *
- SAGE CLARY OIL FRENCH *
- SAGE CLARY OIL GREEN DISTILLED

SPICY

- CARDAMOM GUATEMALA EXT Co2 *
- CARDAMOM OIL GUATEMALA
- CINNAMON BARK OIL MADAGASCAR LMR *
- CINNAMON BARK OIL MADAGASCAR ORG LMR *
- CINNAMON BARK OIL CEYLON LMR
- CINNAMON BARK ESSENTIAL MADAGASCAR *
- CORIANDER SEED OIL *
- GINGER OIL INDIA *
- GINGER OIL FRESH MADAGASCAR *
- GINGER OIL FRESH MADAGASCAR ORG
- JUNIPERBERRY OIL BALKANS
- JUNIPERBERRY OIL BALKANS RECT BHT
- MARJORAM OIL EGYPT LMR *
- PEPPER OIL BLACK MADAGASCAR *
- PEPPER SICHUAN ABS CO2 EXT LMR *
- PEPPER PINK Co2 *
- SCHINUS MOLLE OIL SFO *
- SCHINUS MOLLE EXT Co2 *
- TURMERIC ROOT ULTIMATE EXTRACT MD LMR

WOODY

- COPAIBA BALSAM OIL BLO
- GUAIAC WOOD HEART BLO
- GUAIYL ACETATE BLO
- HEALINGWOOD BLO
- MOSS OAK ABS IFRA43
- MOSS TREE ABS MD IMP IFRA 43
- OAKWOOD CO2 EXTRACT 60% TEC
- PATCHOULI OIL LIGHT BLO
- PATCHOULI OIL INDONESIA IRON FREE
- PATCHOULI OIL INDONESIA MD
- PATCHOULI HEART N3 *
- PATCHOULOL SESQUITERPENS
- SANDALWOOD OIL SPICATUM(AU)LMR
- SANDALWOOD OIL NEW CALEDONIA LMR
- VETIVER OIL HAITI FOR LIFE *
- VETIVER OIL JAVA LMR *

* Available in flavor grade

Organic

Sole Distributor for ingredients in India

Estd 1980

FINE FRAGRANCES PVT. LTD.

Leading Distributors and Suppliers of High Quality Natural & Synthetic Perfumery & Flavor Ingredients, Reconstitutes and Fragrance compounds.

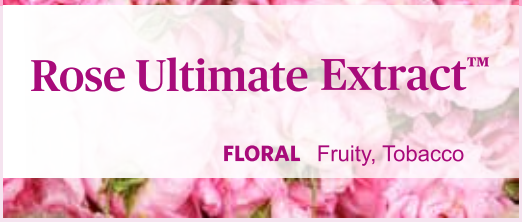
119, Jolly Maker Chamber No. 2, 11 th Floor, Nariman Point, Mumbai 400 021, INDIA

Tel.: + 91 22 61454000, Email : sales@finefrag.com, web : www.finefrag.com

The Fine Fragrances Boutique

Explore • Experience • Express

Come experience IFF LMR's Rose collection



Rose Ultimate Extract™

IPC NUMBER 180238

OLFACTIVE TERRITORY	OLFACTORY DESCRIPTION		
Opulent	Floral, fruity, with apricot and osmanthus notes, tobacco facettes, and spicy on dry down.		
PROCESSED PART	**PROCESS**		
Flowers	Solvent extraction followed by purification with ethyl alcohol		
LIST OF COMPONENTS	**VISUAL DESCRIPTION**	**YIELD**	
phenylethyl alcohol, heavy stereoptens, citronellol, geraniol	Orange red liquid	1 kg is made from about 800 kg of vegetal	
TSCA CAS NUMBER	**EINECS NUMBER**	**SOLUBILITY**	**FLASHPOINT**
8007-01-0	290-260-3	Soluble at 10% in ethyl alcohol 96%	>100°C

Rose Abs Isparta LMR For Life

IPC NUMBER 180428

OLFACTIVE TERRITORY	OLFACTORY DESCRIPTION		
Opulent	Rich floral rose note with fruity and green topnote, warm honey and spicy heart and a powdery undertones		
PROCESSED PART	**PROCESS**		
Flowers	Solvent extraction followed by purification with ethyl alcohol		
LIST OF COMPONENTS	**VISUAL DESCRIPTION**	**YIELD**	
phenethyl alcohol, citronellol, geraniol, eugenol, stearoptenes	Red liquid with sediment	1kg is made from about 700kg of vegetal	
TSCA CAS NUMBER	**EINECS NUMBER**	**SOLUBILITY AT 20%**	**FLASHPOINT**
8007-01-0	290-260-3	Soluble at 10% in ethyl alcohol 96%	100°C

Rose Essential™

IPC NUMBER 180256

OLFACTIVE TERRITORY	OLFACTORY DESCRIPTION		
Opulent	Typical odor of the fresh rose water, with a spicy green and heavy persistent character.		
PROCESSED PART	**PROCESS**		
Flowers	Combination of fraction exclusively obtained through physical processes such as hydro-distillation, distillation, steam stripping and ion exchange		
LIST OF COMPONENTS	**VISUAL DESCRIPTION**	**YIELD**	
citronellol, nerol, geraniol, stearoptenes	Pale yellow liquid	1 kg is made from about 2000 kg of vegetal	
TSCA CAS NUMBER	**EINECS NUMBER**	**SOLUBILITY**	**FLASHPOINT**
8007-01-0	290-260-3		77°C

Estd 1980

FINE FRAGRANCES PVT. LTD.

Leading Distributors and Suppliers of High Quality Natural & Synthetic Perfumery & Flavor Ingredients, Reconstitutes and Fragrance compounds.

119, Jolly Maker Chamber No. 2, 11 th Floor, Nariman Point, Mumbai 400 021, INDIA

Tel.: + 91 22 61454000, Email : sales@finefrag.com, web : www.finefrag.com

The Fine Fragrances Boutique

Explore • Experience • Express

Explore world class flavor and fragrance ingredients from Symrise

symrise

- **Geraniol Fine**
- **Nerolex**
- **Cyclodumal Acetate**
- **Linalool Coeur**
- **Linalyl Acetate Coeur**
- **Tetrahydrolinalool**

Anethole Extra 21/22

- **Odor Profile:** A sweet taste and characteristic of anise-like odor
- **Common Uses:** Used in a wide variety of flavors and fragrances

Carvone-L

- **Odor Profile:** A refreshingly cool, minty odor and taste
- **Common Uses:** Used extensively in flavor oils such as spearmint, but is also used in spice and floral fragrances

Symcool® WS-3

- **Profile:** Flavorless and odorless. Cools mainly the roof of the mouth, back of the mouth and the back of the tongue
- **Common Uses:** Chewing Gum, Confectionery, Oral Care Flavors

Symcool® WS-5

- **Profile:** Flavorless and odorless. Cools mainly the roof of the mouth and throat.
- **Common Uses:** Chewing Gum, Confectionery, Oral Care Flavors

Symcool® WS-23

- **Profile:** Flavorless and odorless. Cools mainly the front of the tongue and front of the mouth.
- **Common Uses:** Chewing Gum, Confectionery, Oral Care Flavors

Symcool® WS-12

- **Profile:** Flavorless and odorless. Cools mainly on the top of the tongue.
- **Common Uses:** Chewing Gum and Confectionery Flavors

Estd 1980

FINE FRAGRANCES PVT. LTD.

Leading Distributors and Suppliers of High Quality Natural & Synthetic Perfumery & Flavor Ingredients, Reconstitutes and Fragrance compounds.

119, Jolly Maker Chamber No. 2, 11 th Floor, Nariman Point, Mumbai 400 021, INDIA

Tel.: + 91 22 61454000, Email : sales@finefrag.com, web : www.finefrag.com

The Fine Fragrances Boutique

Explore • Experience • Express

Presenting 100 % Pure & Natural Ingredients

Absolutes, Resinoides, Essential Oils

FAHE

AMBER
- LABDANUM ABSOLUTE
- LABDANUM ABSOLUTE EXTRA
- LABDANUM RESINOID PURE

GREEN
- GALBANUM ABSOLUTE
- GALBANUM OIL
- GALBANUM RESINOID PURE

MOSSY
- OAKMOSS ABSOLUTE

WOODY
- COPAIVA BALSAM ABSOLUTE
- COPAIVA BALSAM RESINOID PURE
- OLIBANUM OIL

BALSAMIC
- BENZOIN ABSOLUTE
- BENZOIN RESINOID PURE
- MYRRH ABSOLUTE
- MYRRH RESINOID PURE
- OLIBANUM RESINOID PURE
- OPOPONAX ABSOLUTE
- PERU BALSAM ABSOLUTE
- PERU BALSAM RESINOID PURE
- STYRAX ABSOLUTE
- STYRAX RESINOID PURE
- TOLU BALSAM ABSOLUTE
- TOLU BALSAM RESINOID PURE

Discover a range of high quality Natural Identical Bases

RECONSTITUTES

AMBER
- AMBER RECON ECO
- AMBER SOLID RECON
- CISTUS RECON BH
- CISTUS RECON BH - MOD II
- LABDANUM RECON FFPL Lb015
- LABDANUM RECON POURABLE
- LABDANUM RESINOID (LABD K-15812-2)

HERBAL
- LAVANDER RECON - BT
- LAVANDER RECON ECO
- LAVANDER RECON EXTRA
- LAVANDIN RECON
- LAVANDIN RECON ECO

ANIMALIC
- COSTUS OIL RECON

BALSAMIC
- BENZOIN RECON ECO
- BENZOIN RECON FFPL BZ110
- COPAIVA BALSAM RECON FFPL CV210
- OLIBANUM RECON MOD-2
- OPOPONAX RECON FFPL OP020
- STYRAX RECON FFPL ST010
- STYRAX RECON IND
- TOLU BALSAM RECON FFPL Tb018
- TOLU BALSAM RECON IND

CITRUS
- BERGAMOT RECON IND
- BERGAMOT SUBCONSTITUTE BT
- LEMON OIL IND -A
- LEMON OIL SYNTH
- PETITGRAIN OIL RECON (ECO)
- PETITGRAIN OIL RECON (PETIT-K)
- PETITGRAIN OIL RECON IND
- PETITGRAIN POWER RECON

FLORAL
- BOIS DE ROSE RECON
- GERANIUM RECON - CHINA
- GERANIUM RECON (TYPE BB)
- GERANIUM RECON POWER
- GERANIUM RECON SUPER
- GERANIUM RECON RBT
- JASMIN SAMBAC RECON
- NEROLI OIL RECON
- YLANG OIL SYNTH
- YLANG OIL SYNTH SUPER
- YLANG RECON ECO

MOSSY
- OAKMOSS RECON
- OAKMOSS RECON IND
- OAKMOSS RECON POURABLE

WOODY
- PATCHOULI OIL RECON 015
- PATCHOULI OIL RECON ECO-2

Estd 1980

FINE FRAGRANCES PVT. LTD.

Leading Distributors and Suppliers of High Quality Natural & Synthetic Perfumery & Flavor Ingredients, Reconstitutes and Fragrance compounds.

119, Jolly Maker Chamber No. 2, 11 th Floor, Nariman Point, Mumbai 400 021, INDIA

Tel.: + 91 22 61454000, Email : sales@finefrag.com, web : www.finefrag.com

RakesH PRODUCTS

Star Export House Recognized by Govt. of India

SERVING THE WORLD SINCE 1972

Natural Essential Oils, Aromatherapy Oils & Carrier Oils

Certified for: US-FDA, WHO-GMP, ISO, HACCP, KOSHER, HALAL & ORGANIC Certified (EXPORT AWARD WINNER)

ESSENTIAL OILS

AJOWAIN SEED OIL
AMBRETTE SEED OIL
ANGELICA ROOT OIL
ANISE OIL
AROMISE OIL
ARTEMISIA OIL
BASIL OIL
BAY OIL
BERGAMOT OIL
BETEL LEAF OIL
BLACK PEPPER OIL
BLUE CHAMOMILE OIL
CADE OIL
CAJUPUT OIL
CALAMUS OIL
CALENDULA OIL
CARDAMOM OIL
CARROT SEED OIL
CEDAR WOOD OIL
CELERY SEED OIL
CINNAMON LEAF OIL
CITRONELLA OIL
CLARY SAGE OIL
CLEMENTINE OIL
CLOVE OIL
CURRY LEAF OIL
CYPRESS OIL
DAVANA OIL
ELEMI
EUCALYPTUS OIL
FENNEL OIL
FRANKINCENSE OIL
GALANGAL OIL
GERANIUM OIL
GINGER GRASS OIL
GINGER LILY OIL
GINGER OIL
GRAPE FRUIT OIL
GUAIAC WOOD OIL
HYSSOP OIL
HEDYCHIUM OIL
HOPS OIL
HOO WOOD OIL
JASMINE OIL
JATAMANSHI OIL
JUNIPER BERRY OIL
KAPUR KACHARI OIL
LABDANUM OIL
LAVENDER OIL
LEMON GRASS OIL
LEMON BALM OIL
LEMON OIL
LIME OIL
LITSEA CUBEBA OIL
MACE OIL
MANDARIAN OIL
MARJORAM OIL
MYRRH OIL
NAGARMOTHA
NIAOULI OIL
NIROLI OIL
NUTMEG OIL
ORANGE OIL
OLIBANUM OIL
OREGANO OIL
ORIGANUM OIL
PALMAROSA OIL
PASSION FLOWER OIL
PATCHOULI OIL
PIPER CUBEBA OIL
PEPPERMINT OIL
PETITGRAIN OIL
PIMENTO BERRY OIL
RAVENSARA OIL
RED THYME OIL
ROSE OIL
ROSEMARRY OIL
ROSE WOOD OIL
ROSE PETEL OIL
SAGE OIL
SAFFRON OIL
SPEARMINT OIL
SUGANDH KOKILA OIL
SUGANDHMANTRI OIL
TAGETES OIL
TANGERINE OIL
TARRAGON OIL
TEA ROSE OIL
TEA TREE OIL
THUJA OIL
THYME OIL
TOMAR SEED OIL
TURMERIC ROOT OIL
VALERIAN OIL
VANILLA OIL
VETIVER OIL
WINTER GREEN OIL
WORM WOOD OIL
YARA YARA OIL
YLANG YLANG OIL
YARROW OIL
ZEDOARIA OIL

VEGETABLE / CARRIER OILS

ARGAN OIL
ALMOND OIL
ALOE VERA GEL
APRICOT OIL
AVOCADO OIL
BAWCHI OIL
BLACK CUMIN OIL
BORAGE OIL
CASHEW NUT OIL
CHAULMOGRA OIL
CHIRAUNJI OIL
CUCUMBER OIL
EVENING PRIMROSE OIL
FLAX SEED OIL
GRAPE SEED OIL
GUAVA OIL
HAMP SEED OIL
HAZEL NUT OIL
JOJOBA OIL
MACADAMIA OIL
MORINGA OIL
NEEM OIL
ONION OIL
PRICKLY PEAR OIL
POMEGRANATE OIL
PUMPKIN OIL
ROSEHIP OIL
SPINACH OIL
PEACH OIL
WALNUT OIL
WATER MELON OIL
WHEAT GERM OIL

INDIAN PERFUMES

AGARIYA BLACK
AGARIYA GREEN
AMBERIYA
AQUAMARIYA
BOUQUET-RZ
CHAMELI GREEN
CHAMPA GREEN
DARBARIYA
DHANALUD SSL
DIWANIYA
FIRDOUS-RL
GUL HINA
HINA-1-2-3
JASMINE-R6
KEWARA-RW
MAJMUA –RT
MASTI-RN
MASTI-RB
MAULSHREE
MITTI ATTAR
MUSK RSI
RAAT KI RANI
ROSE –RN
SAMAMA MH-26
VALLEY-RW
ZAFRAN

FLORAL WATER

BASIL
FULWARI
GINGER
JASMINE
LAVENDER
LEMON
LEMON GRASS
ROSEMARY
ROSE PETAL
SANDELKA PLUS
TURMERIC

OUR GROUPS

Organikos Valley™

AROMA VAIDYASHALA™

RakesH PRODUCTS

25, Azad Nagar, Kanpur-02 (U.P.), India. Tel: +91-512-2563930 to 35 Fax: +91-512-2563936
Email: info@rakeshsandal.com | info@rakeshin.com Web: www.rakeshin.com

Woody Notes in Perfumery
Vetiver & Derivatives

by Danute Pajaujis Anonis, Chemist Perfumer

Botanical origin, production, composition and fragrance compounds

Vetiver is an important woody note in perfumery. The word vetiver, vetyver in French, originated in Tamil: * vettiveru = vetti, worthless + veru, useless.[1] The Indian term for vetiver is Khus, and in Indonesia is known as Akar Wangi.

Botanical origin: Vetiver, Vetiveria zizanioides Staph., is a grass growing wild, semi-wild or cultivated in many parts of the world, including India, Haiti, Java, Réunion Islands, China and Indonesia.

Mode of production, yield, type of oil: Vetiver oil is obtained by distillation of Vetiveria zizanioides roots. Steam distillation is a more recent method used, and it gives a better yield of the oil. The yield of the dried vetiver Java roots is from 1.5 to 2 percent, and that of vetiver Haiti varies from 1 to 1.5 percent.[2] A more recent source gives the yield of air-dried vetiver Java roots as 2 to 3 percent.[3]

The following types of vetiver oil are available commercially:

- vetiver Java
- vetiver Haiti
- vetiver Réunion
- vetiver China
- vetiver Indonesian
- vetiver redistilled
- vetiver de-ironized
- vetiver resinoid

Chemical Composition

The chemical composition of vetiver oil was studied in the beginning of the 20th century. Theulier studied the physicochemical properties of fractionated vetiver oils distilled in France and on Réunion Island. Other investigations were carried out by various researchers, among them Semmler.[4] In the 1950s, the following components of vetiver oil were identified:[5]

- **α-and β-Vetivone (vetiverone):** Java and Réunion oils were found to contain 7.5 to 35.1 percent of ketones, depending on the method used. The odor of vetiver is due chiefly to ketonic sesquiterpenes. Only two of them, listed above, have been isolated.
- **Vetivenols (vetiverols):** These alcohols were investigated by various researchers in the beginning of the 20th century, but the results were inconclusive. Only by the middle of the century did it become apparent that at least 60 percent of these sesquiterpene alcohols occurring in vetiver Java oil seemed to consist of a mixture of primary alcohols in which a tricyclid alcohol predominates, while bicyclic alcohols amounted only to 10 percent.
- **Vetivenyl vetivenate:** An ester that vetivenic acid forms with vetivenol and which readily hydrolyzes.
- **Palmitic acid**.
- **Benzoic acid:** In considerable amounts.
- **Vetivene:** A colorless and odorless sesquiterpene.

In 1976, a study of the carbonyls of Haitian vetiver oil was done. Seven novel sesquiterpenoid and norsesquiterpenoid carbonyls were characterized. The major isomer of dihydro β-vetivone had "a strong rich woody peppery odor," while the remaining novel carbonyls were of a general woody type odor. The researchers believed that all of the carbonyls play a role in achieving the complex woody odor of vetiver oil.[6]

Among vetiver oil components characterized in the early 1970s were α- and β-vetivones, the norsesquiterpene khusimone and three biogenetically derived C-12 ketones, which were deemed to be the most interesting. Spiroketone and khusimone appear to play an important role in the reconstruction of vetiver oil. Therefore, total new syntheses of these compounds were developed.[7]

This article was appeared in Perfumer & Flavorist Magazine Vol.29, May and June 2004 issues respectively. With special permission and arrangement with Allured Publishers, USA, we are publishing the said article for the benefit of our members and readers.

In the study of vetiver oils of different geographical origins, other researchers reported 95 compounds in the hydrocarbonrich section, fractionated via distillation of vetiver oil Haiti, and suggested that more than 150 components were present in the total vetiver oil.[8]

In 1977, a synthesis of β-vetivone via base-catalyzed spiroannelation of phenolic tosylates was reported.[9] A 1978 patent covered a new synthesis of khusimone.[10] 6,6,7-Trimethyl-tricyclo [5.2.2.$0^{1,5}$] undec- 8-en-2-one was given as the starting material for this synthesis. This compound was described as having a woody, sandalwoodlike odor with vetiver nuances, thus being of interest. In 1989, another synthesis of khusimone was reported, starting from (S)-6,6-dimethyl-5-methoxycarbonylmethyl-2-cyclohexen-1-one. Overall yield was 6.9 percent.[11]

In 1996, an analysis of vetiver Haiti was reported that showed that the main constituents were isovalencenol, β-vetivone and khusimol. Because vetiver was a very complex oil, it is a difficult task to separate and elucidate the structure of its components.

Using flashchromatography, two olfactory important fractions were obtained: (1) medium polar (hydrocarbons, ethers and ketones), and (2) polar alcohols and α,β-unsaturated ketones. The combination of distillation and repeated FC yielded several new compounds.

In the medium polar fraction, one of the sesquiterpene hydrocarbons that never isolated before in vetiver oil was cis-eudesmadiene. Among other isolated ethers were α-agarofuran and 4,7-epoxy spirovetiva-1,11(12)-diene.

In the polar fraction, the transformation of secondary alcohols to methyl ethers; subsequent split tube distillation gave 30 new sesquiterpene ethers after repeated FC. Olfactory comparison of the odor of several methyl ethers and their corresponding alcohols showed that the odor of the methyl ethers was more earthy, khusimone-vetiver or patchouly-like, while the alcohols had woody odor tonalities with amber, sweet and grapefruit undertones.[12]

Synthetic Compounds

Vetiver has a lasting woody odor with a hint of camphoraceous, earthy and musty undertones. It has points in common with violet-orris and patchouli type odors, and it blends well with sandalwood and rose odors. Vetiver is especially effective with musky odors. Several of the modifiers of vetiver odor are listed in T-1.

Odor characteristics of tridecan-x-ones (x = 2,3,4,5 and 6) — **T1**

For lift and freshness	To add floralcy	To add sweetness	Folial/green	Spicy	Woody	Fixatives
Aldehyde C-10	Aurantiol	Coumarin	Hexenyl acetate	Isoeugenol	Cedarwood	Amyl salicylate
Aldehyde C-11	Jasmine	Labdanum resinoid	Methyl octine carbonate		Sandalwood	Benzophenone
Aldehyde C-12 (MNA)	Lilial	Musk ketone	Phenylacetaldehyde dimethyl acetal			Dimethyl hydroquinone
Bergamot	Nerol	Styrax resinoid				Diphenyl oxide
Cassie	Neroli	Tolu balsam				Isobutyl
Citraldimethyl acetal	Rhodinol	Vanilla resinoid				Musks (various types)
Clary sage	Rose	Vanillin				
Geranonitrile	Terpineol					
Lavender	Ylang ylang					
Orange oil						
Thyme						
Ylang ylang						

Vetiver Imitations

Because of the complexity of vetiver oil it is difficult to reproduce the vetiver odor. Several early imitations were developed; some served in the past to fraud the natural oil. Here are several examples:

Complex of Vetiver Oil No. 1[13]	
vetiver oil	50.00
sandalwood	40.50
copaiba balsam	8.00
Rhodinol	0.50
Exaltone	0.01
	99.00

Vetiver Synthetic No. 2	
vetiver bourbon	225
cedarwood	150
copaiba balsam	100
solvent	25
	500

Vetiver Synthetic No. 3	
cedarwood	145.0
sandalwood	135.0
guaiacwood	75.0
hercolyn Atlas	70.0
vetiver Haiti	55.0
vetiver acetate	40.0
labdanum resinoid	20.0
aldehyde C-18	20.0
methyl ionone	15.0
tolu balsam	12.5
isobutyl quinoline	7.5
cade oil 10%	5.0
	600.0

More recent vetiver specialties approximate the odor of vetiver oil, but leave much to be desired in regard to lastingness and fixative power.

Traditional Fragrance Compounds

Let us take a look at a number of illustrative fragrance compounds containing vetiver or its derivatives.

Aldehydic Chypre[14]	
clary sage	35
mousse de chene absolute	50
nutmeg	35
patchouli	50
vetiver	95
bergamot	125
orris concrete	25
orange oil	30
sandalwood	90
orange flower absolute	30
jasmin absolute	30
ionone	95
methylionone	90
labdanum absolute	40
coumarin	25
heliotropin	90
vanillin	20
musk ketone	50
aldehyde C-11 10%	75
aldehyde C-10 10%	75
aldehyde C-12 (MNA) 10%	50
	1205

Chypre I[15]	
mousse de chene	50
bergamot	225
vetiver Bourbon	75
lavender	50
Sandalwood EI	70
patchouli	10
cloves	35
jasmin synthetic	100
rose synthetic	80
isobutyl salicylate	70
cinnamic alcohol	50
heliotropin	100
coumarin	50
tonka resinarome	20
aldehyde C-12 (MNA) 10%	15
	1000

Cuir de Russie[16]	
birch tar oil	60
castoreum 10%	150
rose otto	20
styrax resinoid	100
bergamot	100
sandalwood EI	10
patchouli	5
jasmin absolute	50
musk ambrette	50
musk ketone	80
Exaltolide 10%	20
vetiver acetate	100
tonka resinoid	30
vanilla resinoid	20
vanillin	50
labdanum resinoid	100
clary sage	5
oakmoss decolorized	10
tuberose absolute	7
acetophenone	3
cassie absolute	10
lemon oil	20
	1000

Foin Coupé (New Mown Hay)[17]	
bergamot	90
coumarin	120
jasmin absolute	100
rose absolute	20
cassie absolute	10
oakmoss absolute	12
anisic aldehyde	18
linalool	20
lavender	36
clary sage	6
vetiveryl acetate	24
hydroxycitronellal	20
methyl anthranilate	6
civet infusion 3%	50
musk tonkin infusion 3%	200
ylang ylang	12
amyl salicylate	60
isobutyl phenylacetate	30
isobutyl benzoate	12
tuberose absolute	20
mimosa absolute	18
ionone a	20
methoxyacetophenone	30
aldehyde C-12 (MNA) 10%	6
sandalwood EI	60
	1000

Traditional illustrative perfume compounds presented in this article were developed before dermatological consideration took effect. Therefore, few components in these formulas would be acceptable today unless a) used in limited percentages or b) specially processed. In the first case, relevant materials include angelica, cinnamon, cinnamic alcohol, citrus oils and oakmoss, and in the second, bergamot and styrax resinoid. Other components have been completely eliminated, including musk ambrette.

References

1. The American Heritage Dictionary of the English Language (Fourth Edition). Houghton Mifflin Co., Boston.
2. E. Guenther, The Essential Oils. Volume 4, p 161, 173, Van Nostrand Co., New York (1952).
3. H.L. Tan, 7th Int. Congr. Ess. Oils, Kyoto, Japan (October 7-11, 1977), General Session: Special Lecture, p 50.
4. Guenther, ibid., p 170.
5. Ibid., p 170-171.
6. B.D. Mookherjee, R.W. Trenkle and R.A. Wilson, 12th Int. Congr. Ess. Oils, Fragr. Flav., Vienna, Austria (October 4-6, 1992).
7. G.H. Büchi, 7th Int. Congr. Ess. Oils, Scientific Section: Special Lecture No. 4. p 87, Kyoto, Japan (October 7-11, 1977).
8. S. Lemberg and R.B. Hale, 7th Int. Congr. Ess. Oils, paper 117, Kyoto, Japan (October 7-11, 1977).
9. S. Torii, K. Uneyama and K. Okamoto, ibid., paper 94.
10. G.H. Büchi and A. Hauser, US Patent 4,124,642, November 7, 1978, assigned to Firmenich SA, Switzerland, cf Fragrances and Flavors. Recent developments: Chemical Technology Review, No. 156, p 108-109, Edit. S. Torrey, Noyes Data Corp., Park Ridge, NJ (1980).
11. K. Sakurai, T. Kithara and K. Mori, 11th Int. Congr. Ess. Oils, Fragr. Flav., Proceedings: v 5, p 137-141, New Delhi, India (November 12-16, 1989).
12. D. Wolf, P. Weyerstahl and H. Marschall, Int. Symp. Ess. Oils, Vienna, Austria (1996).
13. R. Cerbelaud, Formulaire de Parfumerie, p 313, Editións Opéra, Paris (1951).
14. R.M. Gattefossé, Formulaire de Parfumerie et de Cosmétologie, p 197-198, Girardot & Cie, Paris (1950).
15. Ibid., p 82.
16. P. Jellinek, Das Praktikum des Modernen Parfuemeurs, p 68, Urban & Schwarzenberg, Wien (1949).
17. Ibid., p 65.

Vetiver, derivatives and aroma chemicals.

In the above, I discussed various vetiver types, the composition of vetiver oils of different origin, showed a few early vetiver imitations and illustrated a number of traditional perfume compounds. In this, I shall exemplify additional types of traditional perfume compounds containing vetiver or its derivatives.

Traditional Fragrance Compounds

Fougerè No. 6

140	geranium Bourbon
100	vetiver
100	lavender
50	amyl salicylate
50	coumarin
40	cananga
10	patchouly
10	solvent
500	

Lavender Water[1]

500	lavender oil French
50	lavender absolute
150	bergamot
30	musk Tonkin infusion 3%
20	civet infusion 3%
10	neroli bigarade
20	orange fl ower absolute
20	petitgrain Grasse
30	orange oil sweet
50	vetiveryl acetate
5	Tonka resinoid
5	hydroxycitronellal
5	clary sage
5	estragon oil
5	cloves
10	styrax resinoid
20	benzoin resinoid
10	labdanum resinoid
30	vanilla extract 10%
15	methylionone
1000	

Mimosa No. 541[2]

300	ylang synthetic
375	bergamot synthetic
65	sandalwood E.I.
60	heliotropin
60	vetiver Réunion
50	orris resinoid
45	neroli synthetic
45	rose synthetic
1000	

Opoponax No. 3

200	bergamot
80	benzoin resinoid
50	vanillin
40	vetiver
32	coumarin
35	musk ambrette
25	lemon c.p.
16	castoreum resinoid
8	patchouly
486	

Origan Base No. 290[3]

200	Raldeine D Giv.
100	cassie synthetic No. 133
100	vetiver Java
80	carnation synthetic No. 117
45	rose synthetic No. 163
40	ylang Bourbon
70	jasmin synthetic No. 51
97	amyl salicylate
40	neroli synthetic No. 75
20	rhodinol
40	opoponax resinoid
23	musk ketone
10	musk ambrette
10	coumarin
50	heliotropin
65	vanillin
6	patchouly
2	aldehyde C-12 (L)
2	mousse de chêne absolute
1000	

Peau d'Espagne[4]

4	birch tar oil rectifi ed
45	castoreum infusion 5%
270	civet absolute 10%
55	sandalwood E.I.
70	bergamot
35	neroli bigarade

7	fleurs d'oranger absolute
55	rose oil Bulgare
50	musk ambrette
35	musk ketone
55	musk Tonkin
10	Tonka absolute
13	coumarin
2	patchouly
14	jasmin absolute
2	cassie absolute
45	tolu resinoid
25	styrax resinoid
20	ylang ylang oil
100	vetiverol
17	cloves
25	lemon c.p.
45	petitgrain Grasse
1000	

Rose V[5]	
phenyl ethyl alcohol	425 cm3
rhodinol	400 cm3
jasmin synthetic	50 cm3
nerol	25 cm3
vetiver	15 cm3
sandalwood	10 cm3
neroli oil	10 cm3
tuberose oil	10 cm3
rose oil	10 cm3

Vetiver Compound[6]	
vetiver Java	140 g
vetiver Bourbon	200 g
sandalwood	100 g
hydroxycitronellal	120 g
cinnamic alcohol	60 g
jasmin synthetic	90 g
heliotropin	80 g
coumarin	50 g
musk ketone	50 g
musk ambrette	10 g

And a more recent vetiver compound is:

Vetiver Bouquet for Men

400	vetiver Bourbon
150	cedryl acetate
120	methyl ionone
120	Grisambrol 10% (Firmenich)
80	patchouly
30	sandalwood E.I.
20	oakmoss resinoid 50%
10	geraniol
20	musk ketone
950	

Dermatological Consideration

Most of the illustrated traditional perfume compounds were developed before the advent of dermatological considerations.

Today, some components in these formulas would (1) be prohibited, (2) have to be specially processed or (3) be limited in percentage used, in accordance with IFRA's (International Fragrance Association) recommendations. For example, use of musk ambrette is prohibited.

In the second category are:

- **Citral**: can be used in conjunction with perfume materials preventing sensitization, such as pinene
- **Styrax:** only vacuum distillation or extraction with ethanol should be used
- **Opoponax**: only obtained by extraction of solvents or steam distillation

In the third category are:

- **Bergamot:** because of its phototoxicity, the level in consumer products used on skin exposed to sunshine should not exceed 0.4 percent
- **Cinnamic alcohol:** limited to 8 percent in consumer products
- **Hydroxycitronellal:** limited to 5 percent in fragrance compounds
- **Lemon oil c.p.**: limited to 2 percent in consumer products
- **Oakmoss absolute:** limited to 0.6 percent in consumer products.

If older fragrances have to be adapted to today's dermatological requirements, future fragrances are facing even more stringent regulations.

Meschede and Duclos described the changing situations in current and future European legislation:

1. Essential oils and related products in Europe and shipped to Europe will be facing new restrictions. Apparently, the European Parliament will be making most regulating decisions in Brussels.
2. The new legislation requires, among other things, the labeling of 26 substances alleged to be allergens identifi ed by the Scientific Committee for Cosmetics and Non-Food Products (SCCNFP) for all skin products.
3. The new legislation requires among other things a labeling of 26 substances alleged to be allergens identifi ed by the Scientifi c Committee for Cosmetics and non-Food Products (SCCNFP) for all skin contact products.

   No differentiation as to the origin of these substances (coming from essential oils or synthetics) was made. The authors listed 59 essentials oils illustrating their total percentage of allergens from 0-90. Even vetiver oil would be a "culprit," listed in the 0-5 percent category.[7]

Aroma Chemicals and Specialties

Let us take a look at different aroma chemicals with woody vetiver and multifaceted odors:

- **Guaiyl acetate (guai-l(5)-en-ll-ol:acetate) (IFF):** woody, vetiver, balsamic
- **Isobutylionone (Bedoukian):** woody, vetiver
- **α-Isomethyl ionol (Bedoukian):** woody, vetiver
- **Methyl cedryl ketone (Vertofi x Coeur - IFF):** woody, vetiver, leather with musky undertones
- **Methyl tetrahydroionol acetate (Bedoukian):** vetiver, vetiver acetate-like
- **Khusimone (7,7-dimethyl-6-methylene tricyclo [6,2.1.01,5] undecan-2-one):** has been found to be mainly responsible for the characteristic odor of vetiver[8]
- **2-Heptanol, 3,4,5,6,6-pentamethyl (Kohinool - IFF):** woody, ambery, vetiver
- **Rootanol 100 (BASF):** minty, earthy, reminiscent of vetiver roots
- **2,5,10-Trimethyl 1,2,5,9-cyclododecatrien-l-yl methyl ketone and isomers (Trimofi x - IFF):** amber, woody note with vetiver and tobacco nuances
- **Vetynal extra (Givaudan):** caryophyllene acetate main component, woody, used as extender of vetiver notes
- **Vethymine (2,4-diethoxy-5-methylpyrimidine):** earthy, dusty, woody and rooty with strong vetiver, patchouli and agarwood nuances[9]
- Vetyval, vetyvertone (4-cyclohexyl-2- methyl-2-pentanone)[10]
- **Vetylbois (1,4 dimethoxy-2-terbutyl benzene):** woody with vetiver and patchouli nuances[11]

Vetiver oil and derivatives are valuable perfume materials used in many women's and men's fragrances and in various cosmetic and soap perfumes.

One patent covers isolongifolene esters.[12] These esters "have valuable perfumery properties, particularly as replacements for vetiverol derivatives."

The second patent describes a genus of substituted hexahydro acetonaphtones having a structure containing a carbon-carbon double bond and carbon-carbon single bonds, possessing multifaceted aromas of sweet, woody, citrusy, vetiver-like, musky, leathery, peppery, hay and green fragrance notes.[13] They are useful fragrance ingredients for perfumes, colognes, cosmetic powders, soaps and detergents.

An example of a hexahydro acetonaphtone derivative used to impart a rich, green, woody note of vetiver is given:

Vetiver Fragrance

10	labdanum resinoid
50	hexahydro acetonaphtone derivative
25	cedrol
5	cedryl acetate
1	isobutyl quinoline
2	α-ionone
15	caryophyllene
2	eugenol

The above fragrance compound may be used in a cologne at a concentration of 2.5 percent in 85 percent aqueous alcohol, and into a handkerchief perfume at a concentration of 20 percent in 95 percent aqueous alcohol. Used in a powder detergent at a concentration of 0.7 percent, it will produce a vetiver aroma with deep green and woody notes.

A third patent describes cyclohexene-3- nitriles, which can be readily synthesized.[14] These nitriles have a good stability in acid and basic conditions; they do not oxidize easily, can withstand higher temperatures, and are suitable in soap, detergents and personal care products.

In the preparation of mixed 3,5-dimethyl - and 2,4-dimethyl-3-cyclohexene nitriles, the odor of combined fractions eight to 18 had a strong green, cuminic note with herbal, cinnamic and woody background. The 24-h dry-out odor was strong, warm, woody.

Application

Vetiver oil and derivatives are valuable perfume materials used in many women's and men's fragrances and in various cosmetic and soap perfumes. Vetiver root has been employed in the Orient since antiquity. The dried root is used to scent clothes lines, by itself or in a form of sachet.

Vetiver and its derivatives are natural fi xatives and are also modifi ers of musky odors. Vetiverol is especially suitable as a background note in fl oral bouquets.

Vetiver was used in old-fashioned violet pomade as fixative.

Vetiver gives a covering power and persistence in talcum powder perfumes. Vetiver also fi nds applications in various types of potpourri, combined with spicy, floral, citrus or lavender notes. In addition, it is a component of perfumes used to impart a pleasant scent to cigar boxes.

It is interesting to note that vetiver is considered an insect repellent, probably due to khusimone, a minor but essential component of vetiver oil with insect repellent power.

Here is an illustrative list of a number of earlier and later fragrances containing vetiver or its derivatives: Arpège (Lanvin), Chanel No. 5 (Chanel), Femme (Ro chas), Miss Dior (Dior), Shalimar (Guerlain), Cravache (Piguet), L'O (Lancôme), Mystère de Rochas, Balestra (ICR), Anais Anais (Cacherel), Silences (Jacomo), Sheherazade (J. Deprez), Bois des Iles de Chanel (1920s, reappeared in 1993), Paradox (Jacomo), Tiffany (Tiffany & Co.), Paco Energy (Paco Rabanne), Must (Cartier), Eau de Vetiver (Guerlain), L'Eau Cheap et Chic (Moschino), Coriolan (Guerlain), Tiffany for Men Sport Cologne, and the 2004 fragrance Le Baiser du Dragon (Cartier).

Conclusion

Vetiver and its derivatives are likely to remain important woody note components in a broad spectrum of men's and women's fragrances in the foreseeable future. In spite of the pessimistic prognosis of G. and F. Robert, who include vetiver oil among the vanishing raw materials because of its popularity and huge world consumption of natural products, vetiver oil is still available and used in fragrances released in 2004.15 Vetiver will continue to remain an important ingredient because it is diffi cult to replace/substitute.

The newer vetiver specialties approximate the initial vetiver odor, but leave much to be desired in comparison to vetiver oil's lasting fi xative power.

References

1. P. Jellinek, Pratikum des Modernen Parfuemeurs. Wien: Urban & Schwarzenberg, p. 69 (1949).
2. O. Gerhardt, Das Komponieren in der Parfuemerie. Leipzig: Akademische Verlagsgesellschaft MBH, p. 279 (1931).
3. Ibid., p.180
4. Jellinek, p.76
5. Fouquet, La Technique Moderne et les Formules de la Parfumerie. Paris et Liège: Ch Béranger, p. 124 (1951).
6. R.M. Gattefossé, Formulaire de Parfumerie et de Cosmétologie. Paris: Girardot & Cie, p. 83 (1950).
7. F.P. Meschede and T. Duclos, Perfumer & Flavorist, 1(28), 48-53 (2003).

8. G.H. Büchi and A. Hauser, U.S. Patent 4,124,642. November 7, 1978; assigned to Firmenich, SA, Switzerland, cf. Fragrances and Flovors.

Recent Developments. Chemical Technology Review No. 156. Edit., S. Torrey, Noyes Data Corporation, Park Ridge, NJ, p. 108 (1980).

9. A. Boix Camps, Perfum. Flavor., 1(24), 20 (1999).

10. Ibid., p. 24

11. Ibid., p. 26

12. U.S. 3,647,847 (assignee: Bush Boake Allen Limited, London, England); Cosmetics and Perfumery, 1(89), 60 (1974).

13. W.L. Schreiber, J.N. Siano and E.J. Shuster, U.S. Patents: 4,076,749; Feb. 28, 1979; 4,107,066; Aug. 15, 1978; 4,108,799; Aug. 22, 1978 and 4,156,695; May 29, 1979; all assigned to International Flavors and Fragrances, Inc., cf Fragrances and Flavors. Recent Developments.

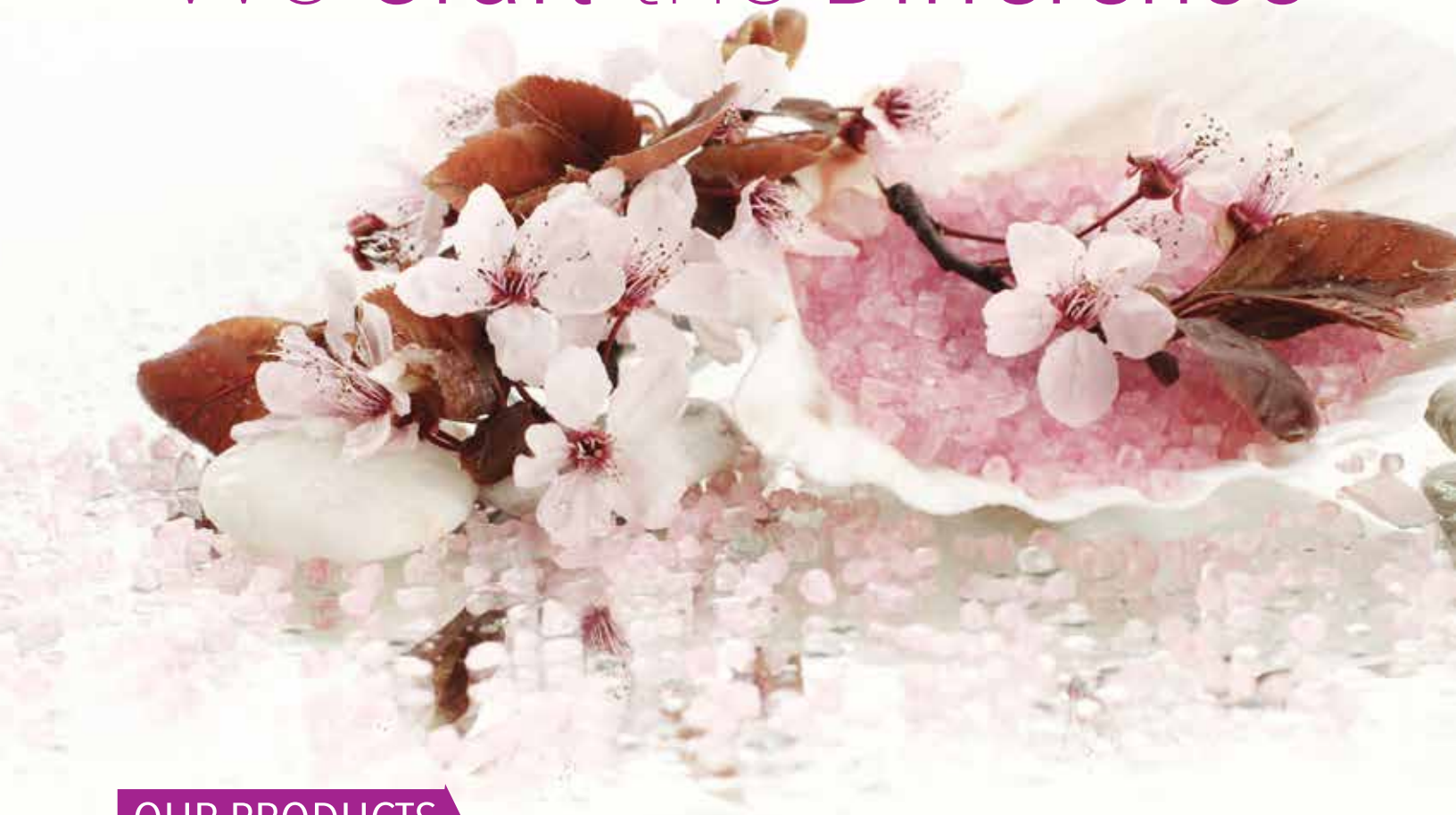
Chemical Technology Review, ibid., pp. 110-114.

14. R.S. De Simone, U.S. Patent 4,146,507; March 27, 1979; assigned to Polak's Frutal Works.

15. G. Robert and R. Robert, Perfum. Flavor., 4(29), 34 (2004).

■

We Craft the Difference



OUR PRODUCTS

- Alpha Damascone
- Beta Damascone
- Benzyl Isoeugenol
- Beta Galbutenone (Beta Dynascone*)
- Damascenone Total
- Fruvertor (Herbavert*)
- Geosmin
- Greenarome (Liffarome*)
- Karanaorg (Karanal*)
- Methoxy Melonal
- Mohanol (Ebanol*)
- Orspirane (Spiroxide*)
- Oriental Ester (Ethyl Safranate*)
- Rionyl (Evernyl*)
- Safranal Pure
- Safranal Ultra-Pure
- Supersantol (Polysantol*)
- Tridecenor (Brahmanol*)

NEW LAUNCH

Amberlox (Cetalox*) • **Methylozone** (Calone*)

Organica Aromatics™

Smell is what we sell

No. 4'O' & 5'B', KIADB Indl. Area, Dobaspet, Nelamangala Taluk, Bangalore Rural 562 111
Tel: +91 80 2773 5152, 2773 5252 • www.organicaaroma.com • info@organicaaroma.com

INDIA | USA | EUROPE | JAPAN

Govt. of India DSIR Approved R&D | ISO 9001 : 2015 COMPANY BUREAU VERITAS Certification | KOSHER Certified

Managing Lethargy in Sensory Evaluations!

Dr. Sitaram Dixit, Independent Consultant – F & F,
Cosmetics, Personal, Fabric and Household Care Chemical Industry
www.sitaramdixit.weebly.com, www.sitaramdixit.bravesites.com,
www.sitaramdixit.yolasite.com, www.sitaramdixit.2itb.com

Everyone works poorly when tired. We become tired whenever the work we carry out involves human (physical and/or mental) effort. In the fragrances and flavors (F&F) industry, the routine feature requiring human inputs is the evaluation of aromatic raw materials and fragranced products. Losing sensitivity to odors (olfactory fatigue, wear out) due to continuous exposure to relatively unvarying smell is a common experience occurring in the F&F industry.

God has no doubt endowed us with a robust human olfactory system, however, on facing a continuous stream of constant odorant (fragrance, flavor or an obnoxious odor) it tends to lose its sensitivity by adapting itself, so that the stream of odor tends to smell weak at first and then, later on, goes to produce a total loss of odor perception.

OLFACTORY ADAPTATION & PSYCHOPHYSICAL FUNCTION

All human senses tend to adapt to varying degrees, with each one susceptible to adaptation according to available sensory inputs. Typically, for instance, if we come out of a dark room, say, a movie theater to bright daylight we would find the outside very bright until our eyes automatically re-adapt to the brightness outside. However, in olfaction, adaptation thankfully is temporary that, which normalizes, simply by breathing non-odorized air. Suppose, we smell a substance and shortly after some moments smell the same substance at a lower concentration than earlier, then either the odor sensation would be absent or would be considerably weaker. This is what we call, “self-adaptation”.

How long does it take a smell to disappear, is a question that many researchers over the past several decades have tried to find an answer to, without success! Every substance does eventually disappear but researchers do not find any clear relation between odor strength and the time taken for the disappearance of the smell sensation. Every person has a different criterion, about the smell sensation disappearance time, versus concentration. Researchers find that the time required to reach total adaptation, is proportional to the square root of concentration. It means that doubling the concentration, requires only about an additional 40% time, to achieve total disappearance of smell sensation. In this case, however, we should consider the existence of biases, that could occur as some individuals may adopt a more stringent criterion, to decide on an odor perception in comparison to other individuals, as changing criteria yields varying appearing rates, of olfactory adaptation versus concentration.

The rate at which an odor sensation disappears, is another question we need to look at. Does it do so rapidly within seconds or are there residual odor left, to adapt out over the next few minutes or does the odor impression diminish slowly and steadily or linearly until no longer present? Expectedly the rate of adaptation, is higher when the stimulus is more intense, although biases like assigning an inappropriately initial higher rating could creep in. Studies say that the perceived odor intensity, declines quite rapidly at first and then more gradually until it finally approaches an asymptote, i.e., reflecting a terminal or final, non-zero, perceived odor level. If we interrupt the continuous stream of odorized air with an odorless air or say, with a different substance, then we can bring about a recovery, meaning a return to sensitivity, before adaptation. Increasing adaptation time, increases olfactory fatigue, which

would require more long waiting time, to recover sensitivity.

Practically speaking, odor intensity, odorant concentration and the time of exposure, affects odor adaptation and therefore it becomes more relevant, to consider and give importance to all this, while setting up odor evaluation panels.

1. To prevent adaptation, choose shorter evaluations, that are more effective, than long ones.

2. Odor intensity perceived, is likely to change during an evaluation, due to adaptation even though, physically the sample is unaffected. Evaluator, therefore, could wrongly state the results of the sample, as having changed in odor quality, when all that has occurred is odor adaptation.

3. A sufficiently well-planned regimen of evaluation is necessary, so that panelists smell more odorants, especially if the odorants are much above their threshold levels.

4. During sequencing fragrance evaluations, take care to present the panelist, the weaker odorant stimulus first, followed by the stronger fragrance stimulus and not vice versa.

5. Presenting odorants of different types or qualities in continuous succession, there is a possibility of cross adaptation.

Cross Adaptation in olfaction varying with both concentration and time is sometimes non-existent or minimal and when existing, it is neither symmetric nor the effect of one odorant on another dependent or reciprocal. Cross adaptation thus is unsystematic and unpredictable.

Odor intensity increases systematically, with odorant concentration. Researches show, that an adapting stimulus, can affect other stimuli, in the same mode with the effect, primarily apparent on odorants of lower physical concentration.

Hedonic long-term adaptation

Sensory adaptation to odors dissipates quickly, although perceptual or hedonic adaptation remains for a longer time duration. Panelist generally report, that an odorant or fragrance no longer smell as pleasant as another odorant or is not as strong as the other and this adaptation could be due to cognitive adaptive process and not sensory as imagined.

We observe that substantial hedonic habituation can even occur when we present the same odorant to the panelist in a single session. An obnoxious odor does not smell as bad as it smelt in the beginning. This phenomenon wherein a fragrance or flavor no longer seems as pleasing or strong as earlier is only another form of long-term habituation. Repeated stimulation with different fragrance odors, becomes a contextual experience against which we can evaluate a fresh fragrance or flavor. When one smells a strong fragrance, it will form a reference odor experience, so that even when the strength of the odor remains the same, the next sample will seem weaker in the new context of heightened intensity. Relative odor intensities, do not change the frame of reference changes, although these odors are in absolute descriptive terms. Helson, calls this the “Adaptation Level Theory of Perception”. The adaptation level is the perceptual/cognitive portion of adaptation, that is not sensory, but is a result of our system of processing and coding information, along with the nature of the human classification of sensory inputs on intensity. All these findings, however, are only general observations and not conclusive findings.

PRACTICAL IMPLICATION FOR TESTING FRAGRANCES

In real-life situations, evaluators must carry out dozens of evaluations without either getting bored, nor with any loss of sensitivity. It is imperative to optimize the product testing sequences and 2-5 minutes of rest periods are necessary to ensure recovery of sensitivity, at least at the supraliminal or suprathreshold intensity levels. Panelists, in any case, should not smell a single fragrance continuously, whether using a blotter smelling strip, taking a whiff from a bottle or even from a human arm.

The ideal single smelling time is about 2 seconds only and if the panelist needs to smell it again, it better be only after 15-20 seconds gap. Alternately, the panelist can smell a blank blotter or odorless cloth, etc. The intervening period between two evaluations, breaks the monotony of similar smells. Product wear-out is an indication, of the panelist adaptation level, reflecting the effect of previous experience with new products. Incidentally, product wear-out, is an evaluative cognitive phenomenon and is not a sensory one.

Considering the evaluator panelists are a motivated lot, it is possible to evaluate up to 20 fragrances in a session, taking care to avoid any significant loss of sensitivity. In an optimized testing situation, adaptation is not an inherent limitation, on olfactory sensitivity, but a motivational phenomenon.

To prevent the panelists from experiencing fatigue, it is significant to reduce the numbers of samples, during sensory evaluation sessions. General experience reveals, that a fragrance panel could efficiently evaluate 4 pairs (8 samples) per session and flavor panel could evaluate only 3 samples per session in an hour or so.

However, we admit that there exists, a lack of scientific clarity, on the accuracy with respect to various factors like,

- Experimental conditions
- Sensory Evaluation methodology
- Duration of the sensory session, etc.

This inadequate scientific information, gives rise to the ambiguity of the word, “FATIGUE”.

THE COMPONENTS OF FATIGUE

a. Muscular Fatigue: In sensory evaluation, muscular fatigue can take place at Jaw level, when evaluating the texture of a solid food. e.g., Chewing gum or Toffee. However, its importance is generally low. Local muscular fatigue should not be confused with general physical fatigue, which affects the whole body.

B. Psychological Fatigue Or Lassitude: The person has no more interest in his/her work due to routine job of smelling/tasting – Similar things’ day in and day out. It is hard for anyone, to concentrate on the job due to this, all resulting in fatigue.

c. Mental Fatigue: This kind of fatigue occurs in sensory evaluation. When person does not have a scientific training on profiles, or descriptors or uses wrong descriptors, which are irreproducible. When one understands, what and why they are performing the job, mental fatigue will reduce substantially, increasing motivation. We observe this happening, more in perfumery than in flavors.

d. Nervous Fatigue: The fear of getting the evaluations wrong, makes the panelist nervous, who eventually fails to concentrate, on discriminating an odor/flavor. Temporary and reversible increase in the threshold values, relates largely to nervous fatigue.

ADAPTATION AND SENSORY FATIGUE

Prolonged stimulation makes our senses, lose their sensitivity. We call this phenomenon as sensory adaptation. In olfaction, adaptation can be complete, i.e., a stimulus we perceive in the beginning, may become completely imperceptible, after some continuous exposure.

Supposing we enter a room having a smoky odor, we will easily be able to perceive it on entering, however after spending some time therein, we will not get that strong smoky smell, thereby meaning our fatigue adapts itself to the smoky background. However, if we come out of the room for few minutes, breath fresh air and then go back inside the same smoky room, we are likely to get the same smoky smell, again as strongly, as the first time earlier. This is a common occurrence in practical life wherein it takes one at least 2-3 minutes to regain the initial sensitivity after fatigue.

Considering all this, we should test odorant samples in pairs, from left to right and then vice-versa or guarantee to follow a random order. We could permit retesting, but not too frequently, else, fatigue could hinder decisions. In any case, the first olfactory

impression, is likely the correct one, in tune with the English expression, "First impression is the best impression". During sensory evaluation of foods, generally complete adaptation takes place, as regaining sensitivity takes time. Practical regular experience show, that panelists perform paired tests, triangular tests, two out of five tests, etc., comfortably without much difficulty.

PRACTICAL SENSORY EVALUATION

In any sensory evaluation study, when panelists assess the same fragrance, on several occasions or say carry out multiple evaluations, of the same fragrance, perceptual changes, are bound to occur. When using a small expert panel, it is advisable, to have many base sizes of judgments, to ensure stable data. Experience indicates that, even panels consisting of less than 9 expert members, are often too erratic that a single aberrant rating, can yield unstable data results, unduly affecting results. When we use larger consumer panels and several judgments of the same product, we are likely to secure a more reliable data, accurately representing the results of long term, human exposure.

In consumer panels, all too often, a single smell of a fragrance, could provide misleading information, as a fragrance liked by a panelist on the first sniff, may be subsequently disliked during normal home use condition. The better way, is to carry out a home-use test, wherein panelists use and evaluate the fragrance for a week or more, along with several other products, in a central location test facility under controlled conditions, unlike one at home.

There is no clear scientific data, on the effects of repeated fragrance evaluation, particularly on product evaluation. In general, replicate ratings, that secures test reliability, should yield same results on different occasions, keeping all other factors constant. Some published reports, instead also attribute odor perceptible changes, to test method inconsistencies.

Repeated smelling of the same fragrance in blind tests, reveals, that the more concrete the sensory attributes (intensity, note) will be, more reliable it is and will repeat themselves with variations. However, for less concrete evaluative attributes (hedonics, imagery) results vary during repetitive evaluations. Thus, in sensory analysis, perfect reliability does not exist. Panelists data varies. Therefore, the best method, to secure reliable ratings data, is to sample large number of panelists, to eliminate errors, due to sampling subpopulations and representations.

Multiple repetitions of evaluations, of the same fragrance, also increases bases size, making the data more reliable. However, there are changes in fragrance profile, over replicate evaluations, fortunately though, the fragrance ratings are sufficiently random, to prevent any systematic shift with repeated experience. Evaluative research loses little on any evaluation from multiple panelists rather than testing the same product repeatedly with just a few panelists.

Although, these findings do not support, superiority of short-term central location testing, over linger-term home use tests, however, it does say, that one rating, secured from a panelist after valid experience with a product, will be as useful, as several such ratings each, secured from the panelist under the same experimental conditions. In fact, selecting meaningful attributes, is significantly more important to produce reliable ratings, in addition to increasing repeated product evaluation, instead of just increasing base size. In short, it is better to test once, with 100 panelists, than test it four times with 25 panelists.

THE AUTHOR'S RECOMMENDATIONS ON STANDARD EXPERIMENTAL CONDITIONS FOR ORGANOLEPTIC EVALUATIONS

FRAGRANCE/FRAGRANCED PRODUCTS (OLFACTORY)

I. Duration of sessions in a well-ventilated odor free room.
   1-2 hours in the morning.
   0-2 hours in the evening if required.
   5-10 minutes break in the fresh air, for every 30 minutes.
II. Technically qualified panelists: 3 to 5 in age group 25 to 40 years.
III. Number of samples: Not more than NINE in each session.

IV. Maximum repetitive testing: 3 times with panelists having "Full Concentration" without "Fatigue".

FLAVOUR / FLAVOURED FOOD PRODUCTS

I. **Duration of Session:** In a well-ventilated convenient aroma free room, 4 or 5 hours with a break of one hour. During this break. Panelist can eat, cakes, bread with butter, pieces of apple, cold coffee or cold tea, fruit juice or drink chocolate. Panelist should strictly avoid spicy or hot food and/or beverages.

II. **Technically qualified panelists:** Group of 6 (number can vary, depending on food product) in age group 20-35 years

III. Number of samples: Not more than five at a time

IV. **Maximum repetitive testing:** Two times only with panelists having a free mind, without any preoccupation thoughts. (We however disqualify all persons who are smokers, pan eaters, tobacco chewers, etc., from becoming panel members.)

To conclude we can say that, "Fatigue" in sensory evaluation depends on the conditions of sensory evaluation. If panelists are sincere and do not consider sensory evaluation as a chore, there is not much fatigue i.e., there is not much variation in the quality of their evaluation over a period, however, if the panelists consider the sensory evaluation as a routine ritual and real hard work, then surely there is a decrease in the quality of responses. Liking the sensory evaluation processes alone can help manage lethargy, fatigue and boredom in fragrance smelling always.

Musks & Fragrance

Indentors for : AROMATIC CHEMICALS & ESSENTIAL OILS

911/A, 'B' Wing, Kanakia Wall Street, Near Holy Family Church,
Andheri Kurla Road, Andheri (East), Mumbai - 400093.(India).
Tel. : +91-22-68151800(100 lines) E-Mail : indentor@muskfrag.com
Web : www.muskfrag.com

INDENTORS FOR AROMATIC CHEMICALS & ESSENTIAL OILS

Vanillin Julan

Vanillin Eternal Pearl

Ethyl Vanillin Eternal Pearl

All Products are Ex Catechol & FCC IX Grade

Manufactured by

Jiaxing Zhonghua Chemical Co.Ltd., China

Crafting scents with ingredients people love

Our name is an invitation to engage your senses at
www.givaudan.com

Givaudan (India) Pvt Ltd.
Fragrance Ingredients Business
Akruti Center Point, 4th Floor,
MIDC Central Road, Andheri East,
Mumbai 400 093, India
Tel # +91-22-66625749

Givaudan

engage your senses

NISHANT AROMAS

Quality Source for Aroma Ingredients

If you are looking out for Quality, Price and Delivery, We are the best choice.

Certified For :

ISO 14001:2004 ISO 9001:2008

Aromatic Chemicals

- α - Humulene
- α - Pinene Ex Eucalyptus
- α - Pinene Synthetic (98%)
- α - Terpinene
- α - Thujene
- Anisic Aldehyde (99%)
- Anisol
- Anisyl Acetate
- Anisyl Alcohol
- Allyl Caproate
- β- Ionone
- β- Pinene - Ex Mint
- β- Pinene Synthetic (98%)
- Camphene
- Caryophyllene (98%)
- Caryophyllene (80%)
- Caryophyllene Oxide
- Citronellyl acetate / butyrate
- Citronellyl formate
- Citronellyl propionate
- Caryophyllene Alcohol/Formate/Acetate
- Citral
- Citronellal
- Citronellol (Natural)
- Citronellol (96%)
- Cis - 3 - Hexanol
- Cis - 3 - Hexenyl Acetate/ Butyrate
- Cis - 3 - Hexenyl Benzoate
- Cyclogalbanate
- D-Carvone
- Delta - 3 - Carene
- Di Hydro Beta Ionone
- Di Hydro Eugenol
- Di Hydro Terpineol
- Di Hydro Terpinyl Acetate
- Dimethyl Octanol Extra
- Dimethyl Octanyl Acetate/Formate
- D-Limonene
- Elemol
- Eucalyptol (99.5%)
- Eugenyl Acetate
- Eugenol
- Ethyl Benzoate
- Ethyl 2 Methyl Butyrate
- Fructone
- Gama Decalactone
- Gamma Terpinene
- Geraniol Synthetic (98%)
- Geraniol Ex. Palmarosa
- Geraniol For Soap
- Geraniol Natural
- Geranyl Acetate
- Geranyl Butyrate
- Geranyl Caprylate
- Geranyl Formate / Propionate
- Greenal
- Gurjan Balsam Light (α- Copaene)
- Gurjan Balsam Light (Gurjunene)
- Gurjan Balsam Dark
- Herbogreenal
- Hydroxy Citronellal (Imp)
- Hydroxy Citronellol
- Iso Amyl Acetate (99%)
- Iso Amyl Alcohol
- Iso Amyl Benzoate
- Iso Amyl Butyrate
- Iso Amyl Phenyl Acetate (98%)
- Iso Amyl Propionate
- Iso Amyl Salicylate (99%)
- Iso Butenol Natural
- Iso Cyclo Citral
- Iso Eugenol
- Isophytol
- Iso Menthone Dextro (90%)
- Isopulegol
- Javanol
- L- Limonene
- L-rose oxide
- Linalool Ex Basil
- Menthone (70:30)
- Menthone (98%)
- Menthyl Acetate
- Methyl Anisate
- Methyl Benzoate (98%)
- Methyl Chavicol (99%)
- Methyl Eugenol
- Methyl Heptanone
- Methyl Heptyl Carbonate
- Methyl Iso Eugenol
- Methyl Phenyl Acetate
- Methyl Salicylate
- Methyl Toluate
- Myrac Aldehyde
- Myrcene
- Methyl hexyl ketone
- Nerol (90% +)
- Nerol Super (70%)
- Nerolidol
- Neryl Acetate / Formate
- 3 - Octanol
- Octanyl Acetate
- Ocimene
- Olibanum Resinoid & Powder
- Orange Oil (10 Fold & 20 Fold)
- p- Cymene
- p- Cresyl Acetate (99%)
- p- Cresyl Methyl Ether
- Phenyl Ethyl Acetate
- Phenyl Ethyl Alcohol
- Phenyl Ethyl Benzoate
- Phenyl Ethyl Butyrate
- Phenyl Ethyl Caprylate
- Phenyl Ethyl Formate
- Phenyl Ethyl Methyl Ether
- Phenyl Ethyl Phenyl Acetate (98%)
- Phenyl Ethyl Propionate (99%)
- Pommerol (P.E.I.A.E.) (99%)
- p-Tolualdehyde
- Rhodinol
- Rose Oxide
- Roseol
- Sabinene
- Terpinolene
- Terpinen-4-ol
- Terpineol
- Terpinyl Acetate
- Tolyl Alcohol
- Trans Anethole (99%)
- Thymol

NISHANT AROMAS

Quality Source for Aroma Ingredients

Certified For :

ISO 14001:2004 ISO 9001:2008

If you are looking out for Quality, Price and Delivery, We are the best choice.

Schiff's Base

- Aurantiol
- Anisic Aldehyde Schiff's Base
- Benzaldehyde Schiff's Base
- Citronellal Schiff's Base
- Citral Schiff's Base
- Indolene
- Tolualdehyde Schiff's Base

Absolutes

- Jasmine Auriculatum
- Jasmine Grandiflorum
- Jasmine Sambac
- Tuberose
- Rosa Damascena
- Rose Edward
- White Ginger Lilly

Essential Oils

- Amryis Oil
- Apricot kernel Oil
- Ajowain Oil
- Anethi Oil
- Basil Oil
- Cade Oil Crude & Rectified
- Cardamom Oil Steam Distilled
- Cedarwood Oil
- Citronella Oil Java
- Cinnamon Oil
- Clove Oil Rectified 85%
- Eucalyptus Oil (60% & 80%)
- Frankincense
- Galbanum Oil
- Geranium Oil
- Jojoba Oil
- Lavender Oil
- Lemongrass Oil
- Mentha Piperita Oil
- Nagarmotha Oil
- Neem Oil
- Orange Oil
- Palmrosa Oil
- Patchouli Oil (Indian)
- Patchouli Oil
- Peppermint Oil
- Spearmint Oil
- Tea Tree Oil
- Vetivert Oil

604, 605,606, 607 Lotus Business Park, Ram Bagh Lane, Off S V Road,
Malad (W), Mumbai- 400 064. Tel. : 022 2880 6611 / 22 / 33 / 44
Website : www.nishantaromas.com, Email : info@nishantaromas.com

Our Agents

South India:
"MASP ENTERPRISES" 28/3, "GANDHAN",
5TH MAIN, 2ND CROSS, CHAMRAJPET,
BANGALORE - 560 018.
Tel: +91-80-2261 0076/+91-94834 26971
Email ID: maspenterprise@gmail.com

North India :
Mr. Govind Tiwari,
Kannauj (U.P.)
Tel.: 05694-235004,
Mob.: 09839715553

Mr. P. V. Pillai,
Pune, Maharashtra.
Tel.: 020-27356718,
Mob.: 9665065184
Email: pillai.vidyadharan@yahoo.com

BALAJI TRADING COMPANY

DEALERS IN NATURAL ESSENTIAL OILS, AROMATIC CHEMICALS AND VEGETABLE OILS

STOCKISTS FOR

PAYAN BERTRAND

- BALSAM COPAIBA
- BALSAM TOLU
- BASIL OIL EXTRA
- BIRCH TAR OIL EXTRA
- CAMOMILE OIL BLUE EXTRA
- COGNAC GREEN OIL
- CYPRESS OIL EXTRA
- ELEMI OIL
- ELEMI RESINOID
- GALBANUM OIL
- GERANIUM OIL AFRICAN
- GRAPE FRUIT OIL EXTRA
- JUNIPERBERRY OIL FG
- LABDANUM ABSOLUTE
- LABDANUM RESINOID
- LAVENDER ABSOLUTE
- LAVENDER BARREME 50/52%
- LAVENDER OIL 38/40%
- LAVENDIN OIL
- LEMON OIL ITALIAN
- LIME OIL
- MARJORAM OIL
- MYRTLE OIL
- NEROLI OIL FG
- OAKMOSS ABSOLUTE
- OPOPONAX RESINOID
- PETITGRAIN OIL
- PIMENTO BERRY
- ROSE OIL RECONSTITUTED FG
- ROSEMARY OIL
- STYRAX HONDURAS RESINOID
- TARRAGON OIL
- YLANG YLANG OIL

AND MANY OTHER PRODUCTS ON DEMAND

WRITE TO US ON :-

507 NAIN KRUPA BUILDING , 118/122 KAZI SYED STREET , MUMBAI – 400 003

TEL : 022 23432526/23448032 FAX: 23401805 EMAIL : thakker_group@outlook.com

WEBSITE : www.thakkergroup.co.in

ASHISH THAKKER 9870031751 MAHESH THAKKER 9821334436

AQUILA

...Ideas Unlimited

Manufacturers of Fragrances

Our aim is to exceed customer requirements through constant product innovation and customer service.

"Innovating Ideas
Innovating Aromas"

- Incense
- Cosmetics
- Soaps
- Fine Fragrances
- Oudh & Bakhoors
- Air Care
- Home Care
- Fabric Care

Registered Office:
101-104, Sunrise Business Park, Road No 16, Wagle Industrial Estate, Thane (West) - 400 604, Maharashtra, India.
Tel.: 022 62483734/711

Branch Office:
D-307, Vibhooti Khand,Gomti nagar, Lucknow, Utter Pradesh, 226010, India.
Tel.: 0522 4006684

Branch Office:
GB-15, Bharat Mata Chowk, Itwari Road, Jagnath Budhwari, Nagpur-440002, Maharashtra, India.
Tel.: +91 9156854515

For your inquires please feel free to contact us.
Email: sales@aquilaorganics.com
Website: www.aquilaorganics.com

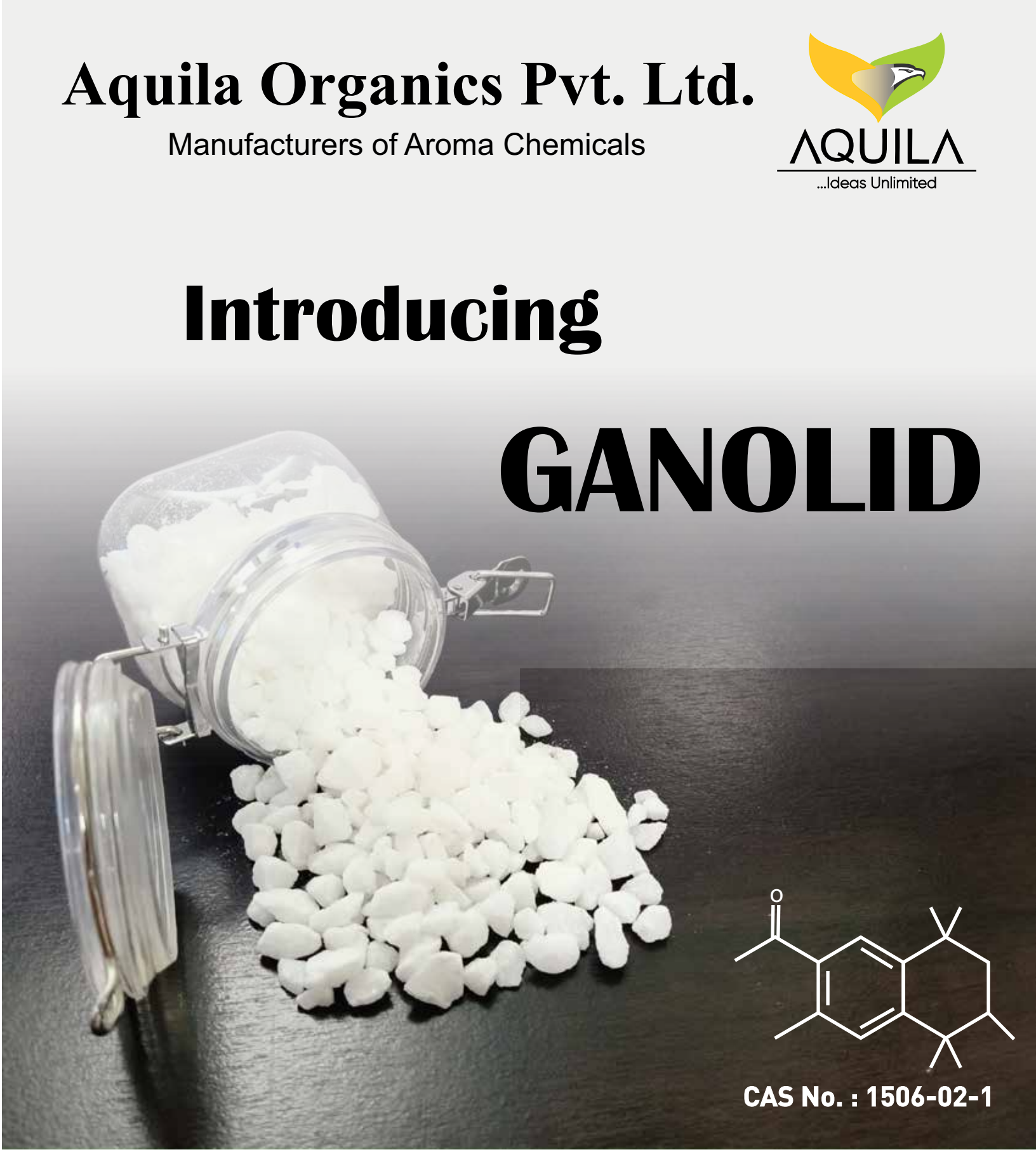
Aquila Organics Pvt. Ltd.

Manufacturers of Aroma Chemicals

AQUILA
...Ideas Unlimited

Introducing

GANOLID



CAS No. : 1506-02-1

Registered Office:
101-104, Sunrise Business Park,
Road No 16, Wagle Industrial Estate, Thane
(West) - 400 604, Maharashtra, India.
For your inquires please feel free to contact us.
Tel.: 022 62483734/711
Email: sales@aquilaorganics.com
Website: www.aquilaorganics.com

Cooperation and Distribution By:

AGAN AROMA

AGAN AROMA & FINE CHEMICALS LTD.

Aquila Organics Pvt. Ltd.

Manufacturers of Aroma Chemicals

AQUILA
...Ideas Unlimited

Arom Chemicals

Product	CAS No	Packing In Kg.
Aldehyde C-16	77-83-8	30/200
Interaldehyde C-11 ISO	1337-83-3	5/10/25/180
Liffavert	67633-96-9	5/10/25
PADMA	101-48-4	30/200
Phenyl Ethyl Alcohol pure	60-12-8	30/200
Phenyl Ethyl Alcohol Extra	60-12-8	30/200
Phenyl Ethyl Alcohol Super	60-12-8	30/200
Phenyl Acetaldehyde 50% DEP	122-78-1	5/10/25/200
Phenyl Acetaldehyde 50% PEA	122-78-1	5/10/25/200
Phenyl Acetaldehyde 85% PEA	122-78-1	5/10/20/25
Phenyl Ethyl Acetate	103-45-7	30/200
Phenyl Ethyl Methyl Ether (PEME)	3558-60-9	25/200
Strawberry Aldehyde	77-83-8	30/200

Made To Order

Product	CAS No.	Packing In Kg.
Aquavanil 80%	2563-07-7	5/25
Auranta A	91-51-0	5/25
Aurantiol	91-51-0	5/25/200
Benzoin Extract	91845-21-5	5/10
Hydratropic Alcohol	1123-85-9	5/25/200
Hydratropic Aldehyde	93-53-8	25/200
Iso Ketone	23787-90-8	25/200
Labdanum Absolute	8016-26-0	5/20
Phenyl Ethyl Salicylate	87-22-9	5/25
Resinoid Benzoin A	91845-21-5	5/25
Resinoid Labdanum	8016-26-0	5/20

Registered Office:
101-104, Sunrise Business Park, Road No 16, Wagle Industrial Estate, Thane (West) - 400 604, Maharashtra, India.
Tel.: 022 62483734/711

Branch Office:
D-307, Vibhooti Khand,Gomti nagar, Lucknow, Utter Pradesh, 226010, India.
Tel.: 0522 4006684

Branch Office:
GB-15, Bharat Mata Chowk, Itwari Road, Jagnath Budhwari, Nagpur-440002, Maharashtra, India.
Tel.: +91 9156854515

For your inquires please feel free to contact us.
Email: sales@aquilaorganics.com
Website: www.aquilaorganics.com

S&S
AROMA ASSOCIATES PVT. LTD.

TOURNAIRE
Produces the best, protects the most

VÖGELE
INGREDIENTS

ventós
LEADERS IN ESSENCE

VANWYK
SYSTEMS

S&S Aroma Associates Pvt. Ltd
B-81, B Wing, Station Plaza, Station Road, Bhandup West, Mumbai 400078
Contact number : +91 22 25669178 / +91 9820571273
Email : sandsaroma@gmail.com | Website : www.ssaroma.com

The Chemistry and Creative Legacy of Methyl Jasmonate and Hedione[a]

How the decoding of the essential oil constituents of Jasminum grandifl orum L. launched a dynamic story of chemistry and creativity

Christian Chapuis, Firmenich SA

Dedicated to Drs. Edouard Demole and Valentin Rautenstrauch, on the occasion of their 80th and 75th birthdays, respectively.

Edouard Demole discovered methyl jasmonate in 1957, accomplished a synthesis of Hedione (from hedone, meaning agreeable and pleasant) in 1958, synthesized methyl jasmonate in 1959, placed both materials under intellectual protection in 1960, and published these discoveries in 1962.[1–3] This simple timeline belies a more complex history of chemistry and creation; on the occasion of Hedione's 50th anniversary, we shall trace this landmark material's hectic history and legacy.

Discovery and Chemistry

In the late 1950s, Roger Firmenich instructed Demole to study in depth, as the subject of his doctoral thesis in E. Lederer's laboratories (Institut de Biologie Physico-Chimique, Paris, 1955–1959), the concrete of Mediterranean jasmine (*Jasminum grandifl orum L.*), in order to discover and determine the missing structures responsible for this typical olfactive signature. At the same time, he also sent a sample to Leopold Ruzicka,[b] as he was involved in a previous analysis in Geneva.[4] Indeed, although more than 87% of the jasmine essential oil constituents had already been determined, the full olfactive reconstitution was still impossible. The fundamental element responsible for this material's wonderful radiance and deep sweet floral character was hidden in the remaining unknown fraction. It should be noted that the price of one kilo of jasmine absolute, produced from ca. 1 ton of jasmine flowers and extracted with ethanol from 2.3 kg of jasmine concrete, could cost up to 20,000 CHF/Kg; at the time, world annual production was limited to ca.[6] tons of jasmine absolute.[5,6] The decision to decode jasmine essential oil constituents was motivated by premium cost of the ingredient and the old saying, "No perfume without jasmine." Up to the middle of the 20th century, ca. 80% of marketed fragrance compositions contained a basic note extracted from this precious handpicked fl ower; outstanding examples include *Jasmin* (*Molinar*, 1860), Jasmin de Corse (*Coty*, 1906), *Arpège* (*Lanvin*, 1927), *Joy* (Patou, 1935) and *Miss Dior* (Dior, 1947).[7]

As mentioned, Demole first isolated methyl jasmonate 1.[2] Its correct structure, based on biosynthetic considerations, consistent with IR, UV, MS and elemental, as well as degradative analyses, was suggested by George Büchi (Massachusetts Institute of Technology, Cambridge, consultant). This was soon confi rmed by subsequent synthesis of its more simple dihydro analogue, Hedione 2, which was initially obtained by simple hydrogenation during the analyses of natural 1 (F-1).[3,8]

Both new ingredients were levogyre and existed in a ca. 7:93 *cis/trans* thermodynamic mixture at ambient temperature.[9] The absolute confi guration of natural (-)-(Z)-*trans* 1 was later determined by R. Hill and A. Edwards.10 The fi rst synthesis of 2 started from either the unsaturated acid 3, or the corresponding d-decalactone 4 via cyclization to form cyclopentenone 5. The subsequent Michael addition of diethyl malonate, followed by saponifi cation of 6a and decarboxylation afforded the free

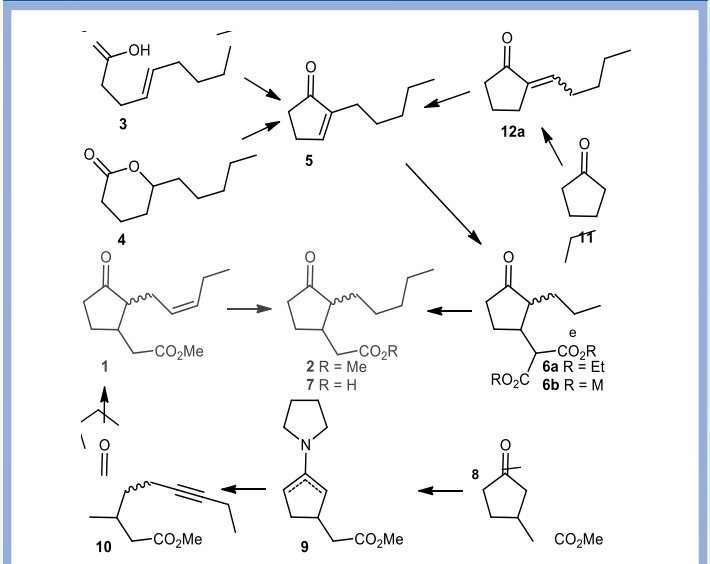
[a]Hedione is a trademark of Firmenich.

[b]Then of Eidgenössische Technische Hochschule, Zürich; winner of the 1939 Nobel Prize for his work on macrocyclic musks, in collaboration with Firmenich.

This article was appeared in Perfumer & Flavorist Magazine Vol.36, December 2011. With special permission and arrangement with Allured Publishers, USA, we are reproducing this article for the benefit of our members and readers

acid 7, which necessitated a reesterifi cation. The first synthesis of methyl jasmonate 1 was longer and non-regioselective. It started from the ketoester 8, accessible either in four steps from muconic acid, or by malonate Michael addition to 2-cyclopentenone.

Hedione 2, initially obtained by simple hydrogenation during the analyses of natural 1[3,8] **F-1**



Alkylation of the intermediate enamine 9 afforded a 2:3 mixture, from which minor 10 could be isolated for monohydrogenation to (Z)-methyljasmonate 1. Perfumers, such as U. Säuberli, were struck by methyl jasmonate's exquisite jasmine, deep, fatty, floral and authentic aspect, and unanimously preferred it to its dihydroanalogue 2, which was less radiant. Nevertheless, Roger Firmenich promoted the development of the economically more promising Hedione 2.

Commercialization of Hedione

A simplified version of Hedione synthesis based on the more affordable cyclopentanone 11-a byproduct available from the synthesis of the adiponitrile intermediate in the nylon-6 process-was undertaken by Demole **(F-1)**. This involved an aldol condensation with pentanal followed by treatment with either a Brönsted acid, or I2, or Formier gas/Pd/C, or transition metal catalyzed isomerization of the exo-double bond of enone 12a.[11–15] The Michael reaction was performed directly with dimethyl malonate, and decarbomethoxylation avoided final reesterification.

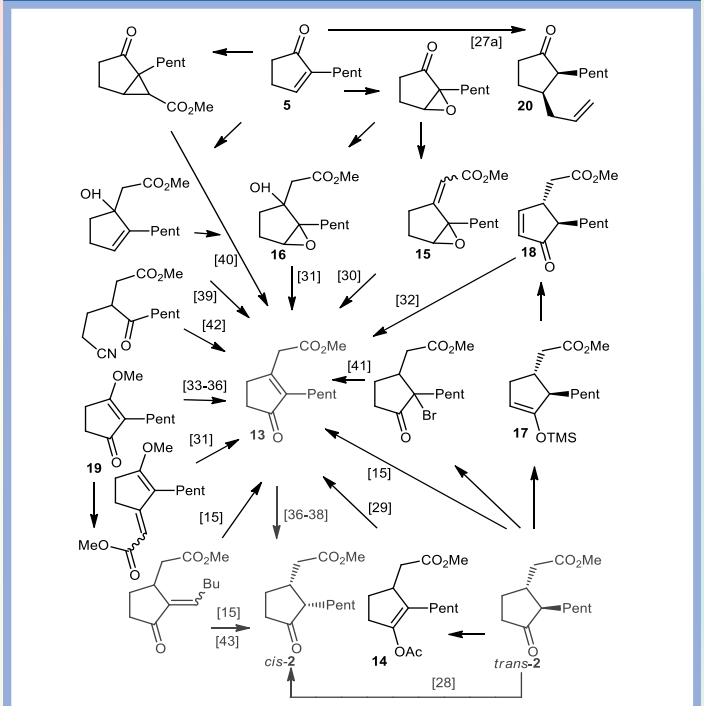
Hedione's adoption was particularly slow, so Roger Firmenich promoted the ingredient by sending samples to notable external perfumers, including Edmond Roudnitska, who used the ingredient to create the successful *Eau Sauvage* for Dior (1966; 2.5%).

Hedione's chemical process has been further ameliorated throughout its history by various researchers. A. Uijttewaal optimized the aldol conditions, and R.M. Weinstein, extending the initial studies of F. Mazenod and W. Keim (Max Planck Institute, Aachen, consultant), concentrated on the isomerization step. The Michael addition was revisited by J. Becker, and C. Golay, and the final decarbomethoxylation was optimized by A. Boschung and A. Zaslona.[16,17] At high volumes, each percentage point was extremely crucial. A robust continuous synthetic process resulted in the construction of fully automated manufacturing units, first in La Plaine (1983), then in Port Newark (1988). The initial price of Hedione was about 1,000 CHF/Kg and as a result, it was first confined to fine fragrances such as *Diorella* (Dior, 1972, 8%). The production cost-and, as a result, the market price—continuously decreased and allowed perfumers to use increasing quantities in their compositions, including Chanel N°19 (Chanel, 1971, 12.6%); First (Van Cleef & Arpels, 1976, 18%); Cristalle (Chanel, 1993, 26%), and Odeur 53 (Comme des Garçons, 1998, 65%), and to extend its use to other segments, such as body and home care products.[18]

It took perfumers a few years to learn how to integrate its particular properties in compositions. They realized that while Hedione itself had relatively low odor intensity, it provided a synergistic effect. Hedione rendered perfumes round, floral and diffusive; soap perfumes were found to possess significant in-use diffusion and an appealing lingering effect on skin after use. Certain agarbatti perfumes incorporating Hedione possess a greater faculty to fill a room with fragrance, as compared to the corresponding version lacking this ingredient. The strength of a composition does not necessarily increase, but more presence, noticeability, and

[c]Ambrox is a trademark of Firmenich

DHH 13 was accessible by several published routes shown here **F-2**



diffusivity are bestowed by an addition of Hedione.[19] Several hypotheses were suggested for explaining these phenomena. The booster effect of Hedione could not be confirmed by W. Pickenhagen on specific symbiosis with Ambrox,[c] as the threshold detection value of the latter was not modified in the presence or absence of the former ingredient

Cis / trans ratios and thresholds of past / current Firmenich qualities of 2 23,25,26b **T-1**

2 at Firmenich	cis / trans ca.	Odor threshold [ngL-1]
Hedione	10:90	0.280
Cisdione[f]	30:70	0.093
Hedione HC	75:25	0.037
Hedione VHC	90:10	0.031
(+)-Paradisone[h]	94:6	0.015

Alternatively, according to the measurements of I. Flament and M. Lindström, the addition of Hedione seems to modify the concentration of co-ingredients in the headspace, for example by decreasing the concentration of C5-acids, or increasing that of Cedroxyde.d In addition, due to its unusual specific fixative properties, Hedione may modify the substantivity of co-ingredients.[20] The accurate sensorial measurements of C. Vuilleumier showed that the efficiency of Hedione, for partner discrimination enhancement by panelists, requires higher concentrations than its own detection threshold.[21] When patent protection for Hedione expired in the early 1980s, Nippon Zeon became a competitor by making a similar quality named Claigeon.e T-1 contains the cis/trans ratios and thresholds of past and current Firmenich qualities of **2.**[23,25,26b]

The Advent of Hedione HC

Hedione, naturally occurring in trace amounts in tea flavor, Brazilian sweet Lima orange, and apparently in several other plants, was finally offered to external clients in 1970.[22,23] That same year, the minor cis-stereoisomer used in Calandre (Paco Rabanne, 1969, 5.8%) was suggested to be stronger.[24]

At the beginning of the 1990s Nippon Zeon commercialized a new quality, rich in cis-Hedione (30:70 cis/ trans), called Cepionate.g It was obtained by continuous distillation in the presence of sodium carbonate, allowing for higher concentrations of the less volatile cis-isomer at elevated temperatures.[27] The immediate response was focused on two actions, namely the stereoselective synthesis of cis-Hedione and (+)-Paradisone.[26c] First, a stereoselective synthesis of the cis isomer, via hydrogenation of dehydrohedione 13 (DHH) and adapting the conditions developed by A.F. Thomas at the beginning of the 1970s, was performed on kilo scale by V. Rautenstrauch, thus confirming that this quality could be manipulated, distilled, stocked and used in perfumery. Indeed, DHH 13 was already accessible by several published routes, as summarized in **F-2**. Industrial methods were developed by K. Crawford, Rautenstrauch and Uijttewaal, involving a peracetic oxidation of enol acetates 14, and by B. Winter, after either appropriate Wadworth-Emmons reaction, or nucleophilic addition via rearrangements of epoxides 15 or 16.[28–30]

[d]Cedroxyde is a trademark of Firmenich.
[e]Claigeon is a trademark of Zeon.
[f]Cisdione is a trademark of Firmenich.
[g]Cepionate is a trademark of Zeon.
[h]Paradisone is a trademark of Firmenich.

These approaches were preferred over dehydrogenation of the TMS enolether 17, followed by double bond isomerization of 18, as explored by R.L. Snowden.[31] The Michael addition to 3-methoxy-2-pentyl-2-cyclopenten-1-one 19, earlier reported, was recently patented by Givaudan and Asahi Kasei Chem. Corp.[32–35] The ultimate success resides in non-epimerizing hydrogenation conditions to produce Hedione HC (high cis) as a *ca*. 90:10 mixture directly after workup.[35–37] It may also be obtained, in a multistep academic sequence, from 5, via an allyl cuprate 1,4-addition, followed by a stereoselective protonation using N-methylsalicylaldimine, completed by an ozonolysis with oxidative workup of [20.26a] The enriched HC quality is perceived as very powerful and tenacious, nicely floral and jasminelike, and is contained in the bestsellers Pleasure (Estée Lauder, 1995, 6.3%) and Juicy Couture (E. Arden, 2010, 6%).

(+)-Paradisone

The intrinsic olfactive values of each stereoisomer were determined by C. Vial via their HPLC-separated menthyl esters, or via direct sniffing by A. Morris at the outlet of chiral GC columns; these properties were later published **(F-3)**.[23] Following the suggestion of G.M. Whitesides (Harvard University, Cambridge, consultant), Rautenstrauch prepared and evaluated grams quantities of each stereoisomer by resolution of the cis-dihydrocucurbic acid **(F-3)**.[43]

Next, Rautenstrauch, assisted by J.-J. Riedhauser, D. Dobbs, and K.P. Vanhessche, a postdoctoral fellow, investigated the asymmetric hydrogenation of DHH 13. Although nothing to date had been reported on tetrasubstituted double bonds, the initial success was obtained on the corresponding acid with either simple or sulfonated BINAP, or Et-Duphos ligands (90% ee), coordinated to unsaturated and more electrophilic Ru(II) as new precatalysts.[36] These conditions were then extended to DHH 13 using either Me-Duphos (64% ee), or the cheaper, tunable and versatile Josiphos derivatives (50–88% ee) in [Ru(Ligand)(H)-(h6-1,3,5-cyclooctatriene)] (BF4).[45,46] Rautenstrauch closely collaborated with external specialists in the appropriate fields, including H.-U. Blaser (Novartis, Basel).[47,48] He collected the fruitful results of collaborations with J.-P. Genet (Université Pierre et Marie Curie, Paris), and S. Bergens (University of Alberta, Edmonton).[43] These chemical processes were further developed in La Plaine, by E. Brazi, P. Dupau and L. Bonomo, developing a procedure for industrial production with the support of Pierre-Yves Firmenich.

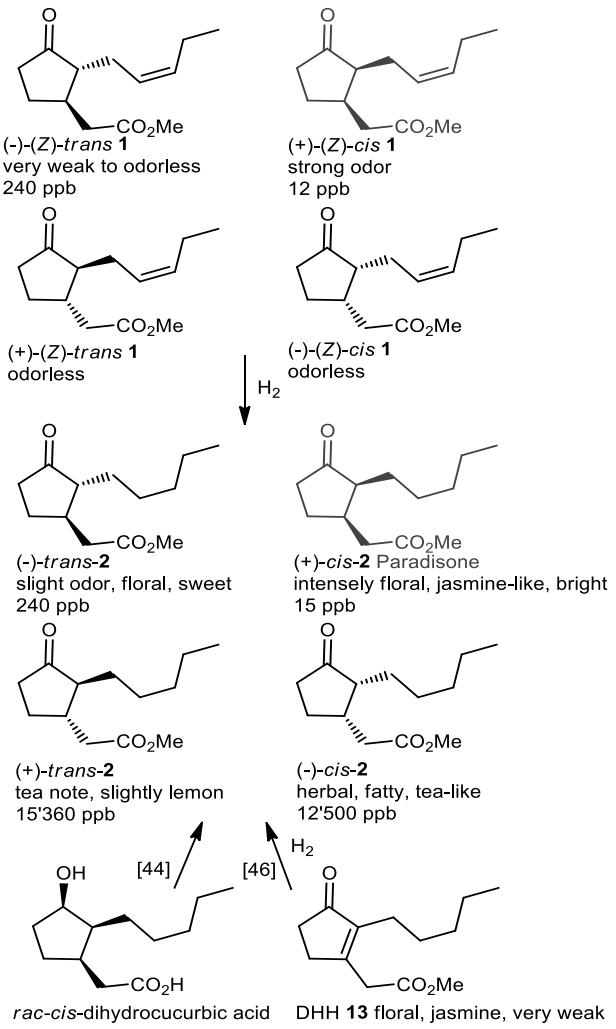
This simple process, not always cited, was preferred over Cinchonia alkaloids catalyzed by asymmetric Michael addition of dimethyl malonate to 5, in which a range of 80-90% ee was obtained, since they afford the undesired trans-stereoisomer.[49,50] Ignoring past methods, F. Liu also secured the trans disposition of the side chains via a 1,4-copper-hydride addition to (S)-(Z)-18, following a particularly efficient asymmetric Rh(I) catalyzed intra-molecular Alder-ene type cycloisomerization reaction of a (Z)-1,6-enyne in the presence of (S)-BINAP (99% ee) (F-4).14,51 Using Paradisone, Olivier Cresp and Alberto Morillas recently created Valentina (Valentino, 2011, 7%), adding to the long list of perfumes incorporating this unique material, introduced by chemist-perfumer Pierre-Alain Blanc.

Impurities and Off-notes

Hedione and its market equivalents vary in quality.[52] This results from variations in distillation techniques, which under ideal conditions suppress tiny impurities responsible for heavier and mushroomy off-notes. Several byproducts may destroy the olfactory impact of Hedione; these include the photochemical sideproducts of Hedione studied by W. Skorianetz, and traces of pentanoic acid or bicyclopentyliden-2-one found in the production fingerprint analysis of S.D. Escher. While practically undetectable on the GC analytical traces, the most potent chemical responsible for the disagreeable mushroom odor—a mysterious diketone 21—took time to be isolated and its structure determined **(F-5)**.

It was only a few years later, in 1980, that A. Eschenmoser (Eidgenössische Technische Hochschule, Zürich, consultant) could suggest a plausible explanation of the presence of a hexanoyl side chain.

Stereoisomers of Hedione and methyl jasmonates, with their olfactive properties and respective thresholds[23,25a,44a] **F-3**



Methyl Jasmonate

The relative and absolute configurations of the Hedione series, associated with their olfactory properties, parallel those of methyl jasmonate. The radiant methyl jasmonate 1 is considered nobler than Hedione, and when Fred-Henri Firmenich assumed the head of the company from Roger Firmenich, some tenacious perfumers requested this remarkable ingredient.

This natural product occurs in Tunisian Rosmarinus officinalis L., in lemon peels as the cis-epimer, in sweet lemon (Citrus limetta), in Kimikan fruit (Citrus flaviculpus), and in tea flavor.[22a,53–59] Also, in the cis-form, this challenging molecule, pursued by the research division of G. Ohloff, has been found as a component of the sexual pheromone of the male oriental fruit moth (Grapholitha molesta).[60]

The ultimate epimerization step could be an artifact resulting from the extraction and isolation methods; the naturally active form was suggested to be the cis-stereoisomer.[60] (+)-Cis-1 displays several biological activities, such as regulation of plant growth, defense and signal transmission in interplant communication.[61–64] Considering the many biosynthetic steps and the different subcellular locations of the biosynthetic enzymes, the entire pathway seems too complex to improve by direct evolution.[65] Therefore, the engineering of rate-limiting enzymes seems more promising, and with the work of I. Whitehead, Firmenich maintains a patent on a strategic step, useful for producing a quality of natural methyl jasmonate.[66]

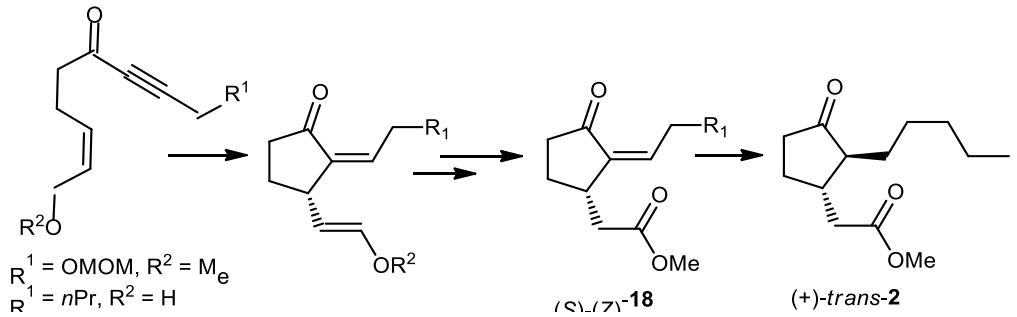
Since diverse approaches toward methyl jasmonate[1] are already discussed in two excellent reviews by Demole in 1982 and T. Sarkar in 1999, this subject will not be addressed exhaustively in this paper; rather, the author shall concentrate on the last decade, including the more promising industrial syntheses, as described for [2.23,32,67] In the wake of the seven-step practical approach of Büchi and B. Egger based on alkylation of dihydroresorcinol, it is one of the two shorter and particularly elegant industrial approaches designed by F. Näf which allowed D. Kastner to introduce methyl jasmonate 1 into the perfumer's palette.[68,69]

Next, Nippon Zeon developed the Tsuji synthesis, based on a Pd-catalyzed decarboxylation-dehydrogenation as the original key step of their trans-Jasmoneigei quality.[70]

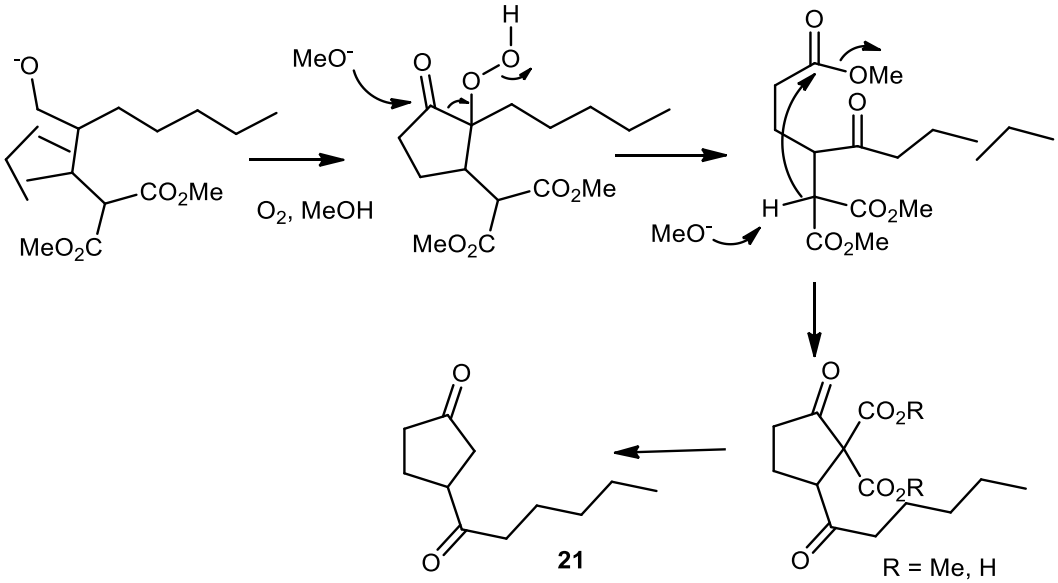
More recently, J. M. Lem, Vanhessche and C. Mahaim presented a novel approach to build the unsaturated side chain, culminating with a Z-selective Wittig reaction **(F-6)**.[71,72] Thus, condensation of dimethoxyacetaldehyde with cyclopentanone 11 afforded 22, which was isomerized into the

[i]Jasmoneige is a trademark of Zeon

The *trans* disposition of the side chains via a 1,4-copper-hydride addition to (*S*)-(*Z*)-18, following a particularly efficient asymmetric Rh(I) catalyzed intramolecular Alder-ene type cycloisomerization reaction of a (*Z*)-1,6-enyne, in the presence of (*S*)-BINAP (99% ee)[51] **F-4**



A mysterious diketone 21 was in part responsible for a disagreeable mushroom odor **F-5**



endocyclic cyclopentenone 23. Intermediate 24 may also be obtained by a cascade Baylis-Hillman/Claisen reaction, via hydrogenation of the unsaturated dimethyl acetal 25.14 This latter was eventually isomerized to the tetrasubstituted analogue 26. Either deprotection of 24, or hydrogenation of 27 furnished aldehyde 28 for an ultimate Z-Wittig reaction.

A particularly expeditious version also starts from 2-cyclopentenone and takes advantage of the previously described analogous Diels-Alder adducts.[72–74] It uses reactive chloroprene, used on a multi-ton scale by the plastic industry, to directly and regioselectively afford cycloadduct 29, with the correct state of oxidation for further conversion to ester 30. This three-step sequence culminates with the usual Z-selective Wittig reaction (F-6).[72,75]

Sensuous (Estée Lauder, 2008, 1.7%) enormously profits from methyl jasmonate 1 in its composition. To celebrate the 50-year anniversary, this ingredient will be commercialized under the name Splendione.[j]

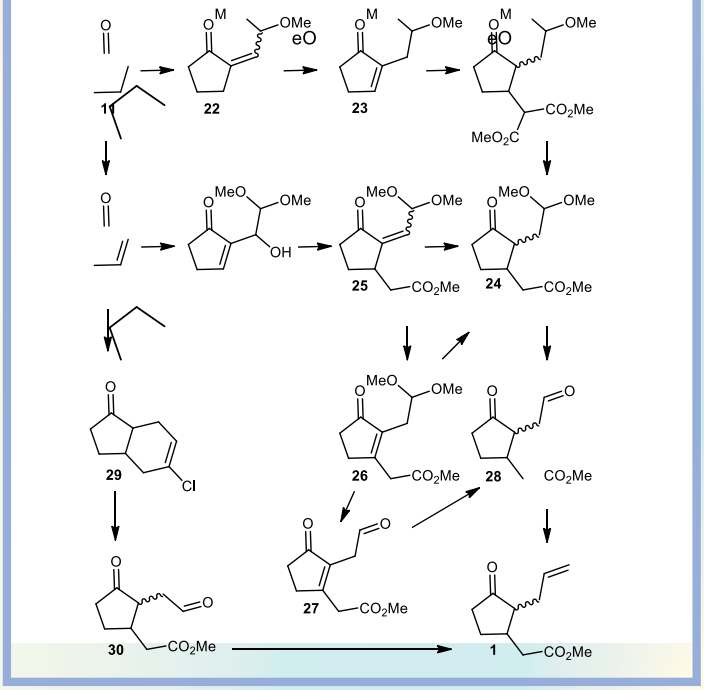
Methyl cis-Jasmonate

An industrially feasible approach was recently claimed by K. Shimizu and F. Matsushita (F-

[j]Splendione is a trademark of Firmenich.

7).35 Starting from suitable saturated or unsaturated 1,4-keto esters, they obtained by Claisen cyclization, 1,3-cyclopentadiones 31a-c. Indeed, the corresponding methylenol ethers

Novel approaches to build the unsaturated side chain, culminating with a *Z*-selective Wittig reaction[14,71–73] **F-6**



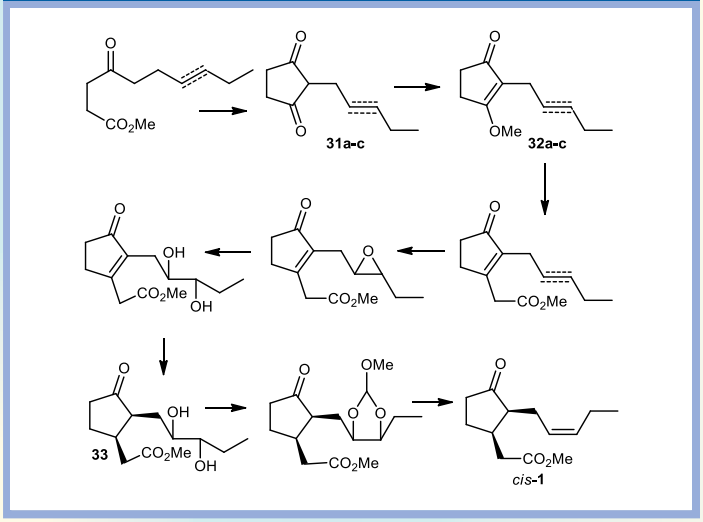
32a-c were subjected to Michael addition, thus affording, after decarbomethoxylation, the desired dehydrohedione 13, and hence Hedione HC 2. The only innovative aspect is the epoxidation of a E-double bond, since after transformation of this trans-epoxide into the corresponding diol, the thus protected side chain allowed for hydrogenation of the tetrasubstituted unsaturation into a *cis*-2,3 substituted cyclopentanone 33 **(F-7)**. Formation of a cyclic orthoester permitted the stereochemical control, so that regeneration of the Z-double bond finally afforded methyl epijasmonate 1, as a 55:45 cis/trans mixture. By applying their allylcuprate addition to cyclopentenone 34 **(F-8)**, followed by protonation with N-methylsalicylaldimine, N. Krause and S. Ebert also obtained cis-epijasmonate 1.[26b]

(+)-Methyl cis-Jasmonate

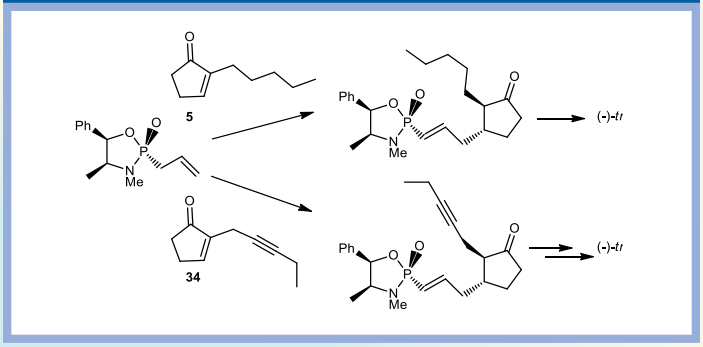
In 1985 Japanese authors showed that solely the minor (+)-cis-enantiomer 1 gave rise to an intense odor, as later confirmed by synthesis of the practically odorless (-)-(Z)- trans methyl jasmonate by German authors.[44,76] The asymmetric Michael addition of a chiral 2-propenylphosphonamide anion, derived from ephredrine, was reported by H. Hailes (F-8).[77] This methodology, which necessitated chromatographic separation of the diastereoisomeric phosphonamides, was applied to both 2-substituted cyclopentenones 5 and 34.

Cleavage of the prosthetic group was performed by ozonolysis in CH2Cl2/MeOH under basic

Methyl *cis*-jasmonate—an industrially feasible approach[35] **F-7**



The asymmetric Michael addition of a chiral 2-propenylphosphonamide anion, derived from ephredrine, was reported by H. Hailes[77] **F-8**



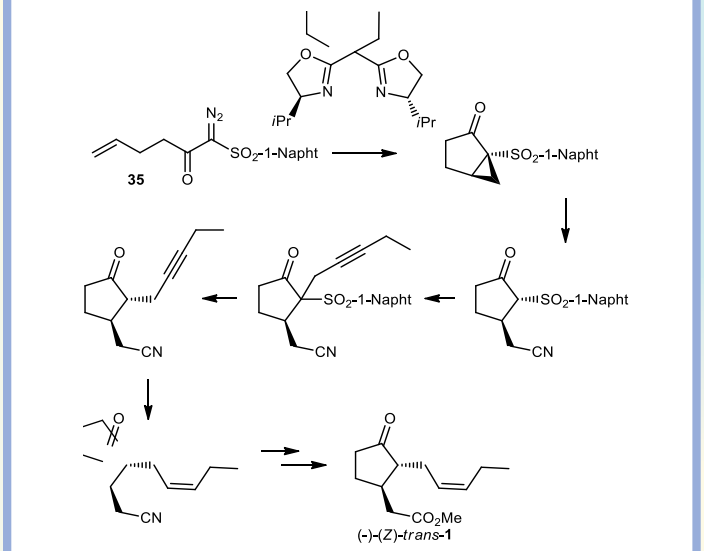
nonreductive conditions. Unfortunately, despite a high 90% ee, either the thermodynamically more stable (-)-trans-1 or (-)- trans-2 was isolated.

An alternative synthesis of (-)-methyl jasmonate, reported by M. Nakada, consists of an asymmetric copper triflate catalyzed intramolecular cyclopropanation of diazosulfone 35 **(F-9)**.[78]

Opening of the cyclopropane ring with NaCN allows, despite concurrent O-alkylation, for the side chain to be introduced regioselectively. Unfortunately, the last classical steps furnished (-)-(Z)-trans-1 **(F-9)**.

Another academic approach reported by K. Inomata is based on the availability of lactone (-)-36, which, after DIBAL reduction, was subjected to an excess of Grignard reagent, thus affording diol 37 (F-10).79 Catalytic reoxidation furnished lactone 38 in moderate yield. This nevertheless afforded, via a tandem retro-Diels-Alder/ene reaction, the cis-fused bicyclic lactone 39. Epoxidation of this produced, after concomitant acidic rearrangement and desilylation,

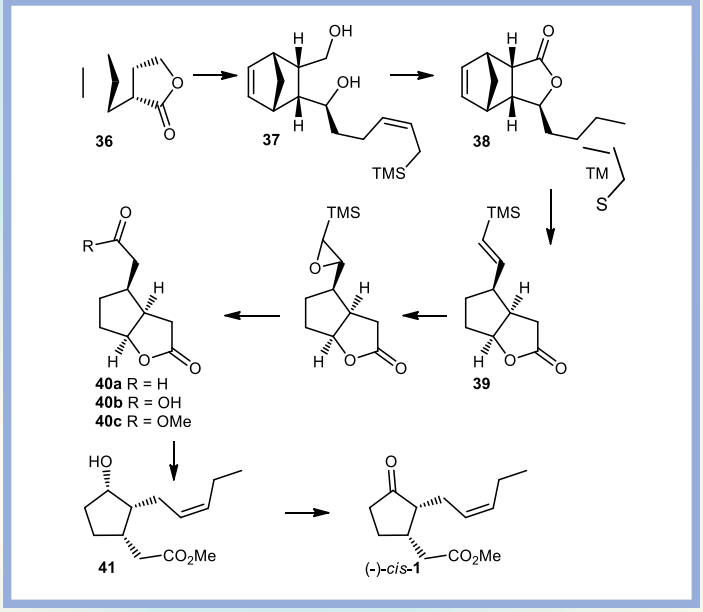
An alternative synthesis of (-)-methyl jasmonate consists of an asymmetric copper triflate catalyzed intramolecular cyclopropanation of diazosulfone 35[78] **F-9**



aldehyde 40a. An oxidation-esterification furnished 40c, a key intermediate in the Montforts synthesis of the all cis-cucurbic acid methyl ester 41, via a second DIBAL reduction and Wittig reaction. An ultimate mild Dess-Martin oxidation finally furnished the undesired antipodal (-)-(Z)-cis methyl epijasmonate 1.80 Since all reported syntheses of (+)-cis-1 are tedious, C. Fehr elaborated an alternative asymmetric approach, which proved to be similarly applicable to Paradisone **(F-11)**.[67,81] The chiral starting materials 42a,b were obtained either via asymmetric hydrogenation or Corey's oxazaborolidine reduction of the corresponding unsaturated ketones 5 and 43, respectively, or by kinetic enzymatic resolution, with recycling of the undesired enantiomer by acidic epimerization.[68–70,82,83] Chirality transfer by Ireland-Claisen rearrangement led, after decarboxylation, to the unsaturated esters 44. The key steps are a diastereoselective syn epoxidation, with subsequent stereocontrolled suprafacial 1,2-H-shift, to afford the (+)-cis-isomers 1 and 2 in high enantiomeric purity.

This approach represents the only practical access to (+)-cis-methyl epijasmonate 1, reported to date. Based on the T. Kitahara Pd-catalyzed allylic substitution, an alternative entry to 45a,b was also performed under G. Helmchen's asymmetric conditions, as reported from 46a (99% ee), and analogously extended to the doubly unsaturated substrates 46b - 45b (98% ee), using 10 mol% of a diphenylphosphine derived from myrtenal.[84–87]

An ultimate mild Dess-Martin oxidation finally furnished the undesired antipodal (-)-(Z)-*cis*-methyl epijasmonate 1[80] **F-10**



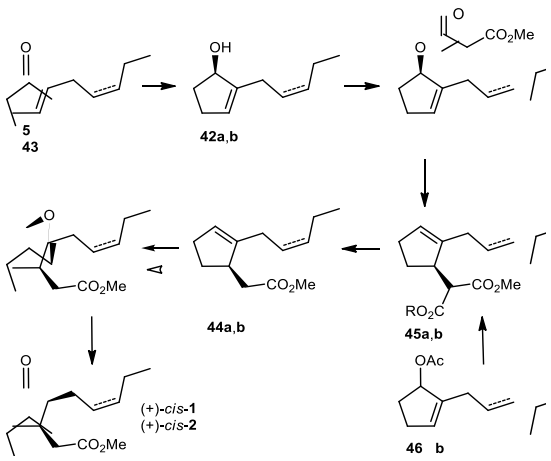
These new syntheses and related products are currently being worked on by Firmenich's research and industrialization teams.

Isotopic Hedione and Splendione

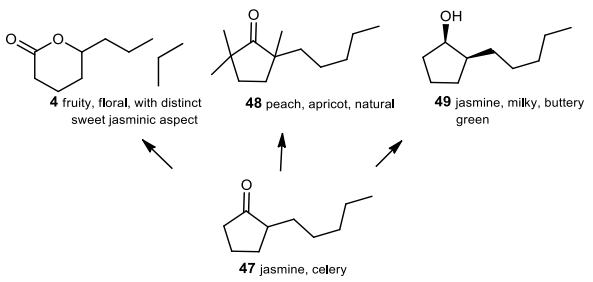
Like much of the industry, Firmenich, under the direction of CEO Patrick Firmenich, is pursuing a sustainable and green orientation to its business by foregoing ecologically unfriendly ingredients. In accordance with the rapid evolution of legislation, such as the recent REACH directive of the European Union, it has become necessary to precisely know the biodegradation kinetics of large-volume ingredients and their persistence in waste or environmental waters.[88] This gave the impetus to A. Chaintreau to develop an accurate analytical GC/MS method for quantifying trace amounts, highly diluted in water, based on D3 to D5 labeled internal standards, while O. Haefliger has implemented

a GC/MS method for bioaccumulation analysis in fish.[89–91] Furthermore, for substantivity, or diffusion studies on diverse materials or in complex matrices, Escher has synthesized OCT3, O14CH3 and OCD3 Hedione.[92] In this context, both analogous D-labeled and isotopic methyl jasmonate may similarly find their usefulness.[93,94] In the latter case, the synthetic approach of W. Kerr is reminiscent of the first catalytic Pauson-Khand reaction reported by Rautenstrauch for the synthesis of 5.[95].

An alternative synthesis of (+)-*cis*-1, which proved to be similarly applicable to Paradisone[81] **F-11**



The structures of Delphone 47, δ-decalactone 4, Veloutone 48 and Delphol HC 49 [97–100] **F-12**



Compared to other large-volume compounds such as Furaneol, Habanolide, Cetalox, Dartanol and Damascones,[k] the Hedione process, with its diverse stereoisomeric and optical qualities, necessitated very important technological efforts and required the highest investment for a single ingredient.[96] This research also helped to produce several derived ingredients issued from common intermediates, such as Delphone[l] 47, d-decalactone 4, as well as Veloutone[m] 48, or Delphol HC[n] 49 (F-12).[97–100]

Acknowledgements

The author begs the pardon of those unmentioned in the research, development and production divisions who have invested time in this chemistry adventure. It is their work and know-how that has ensured the success of these ingredients over 50 years, even long after the expiration of the first patents.

Address correspondence to Christian Chapuis, Firmenich, Route des Jeunes 1, P.O. Box 239 Geneva 8 CH-1211, Switzerland; christian.chapuis@firmenich.com.

References

1. E Demole and E Lederer, CH 382731 (1960); E Demole and E Lederer, CH 490313 (1960); A Firmenich, R Firmenich, G Firmenich and RE Firmenich, CH 382731 (1961).
2. E Demole, E Lederer and D Mercier, Helv Chim Acta, 45, 675 (1962).

3a. E Demole, E Lederer and D Mercier, Helv Chim Acta, 45, 685 (1962).

3b. E Demole and M Stoll, Helv Chim Acta, 45, 692 (1962).

4. L Ruzicka and M Pfeiffer, Helv Chim Acta, 16, 1208 (1933).
5. G Ohloff, Riechstoffe und Geruchssinn, die molekulare Welt der Düfte. Springer-Verlag, Berlin Heidelberg, p 149 (1990).
6. J Garnero, D Joulain and P Buil, Riv Ital EPPOS, 62, 8 (1980).
7. H Janistyn, Taschenbuch der Modernen Parfümerie und Kosmetik. Wissenschaftlische Verlaggesellschaft MBH, Stuttgart, 3rd Ed, p 134-137 (1966).
8. MJL Tschan, G Süss-Fink, F Chérioux and B Therrien, Chem Eur J, 13, 292 (2007).
9. D Varech, C Ouannes and J Jacques, Bull Soc Chim Fr, 32, 1662 (1965); R Kaiser and D Lamparsky, Tetrahedron Lett, 3413 (1974).
10. R Hill and A Edwards, Tetrahedron, 21, 1501 (1965).
11. J Conia and P Amice, Bull Soc Chim Fr, 3327 (1968); N Ono, H Miyake and A Kaji, Synthesis, 1003 (1981); M Anwer, D Sherman, J Roney and A Spatola, J Org Chem, 54, 1284, (1989).
12. T Yamamoto, H Ujihara, K Adachi, T Higiwara and S Watanabe, US 2003/109755 (2003).

[k]Furaneol, Habanolide, Cetalox, and Dartanol are trademarks of Firmenich.

[l]Delphone is a trademark of Firmenich. mVeloutone is a trademark of Firmenich.

[n]Delphol is a trademark of Firmenich.

13. K Matsumoto and A Nagasawa, EP 2269971 (2011).

14. C Chapuis, G Büchi and H Wüest, Helv Chim Acta, 88, 3069 (2005).

15. N Katsin and R Ikan, Synth Commun, 7, 185 (1977).

16. K Mine and K Fukuda, EP 1433773 (2004).

17. K Mine and H Hagi, EP 1498407 (2005).

18. D Kastner, Parfüm Kosmet, 66, 5 (1985).

19. K Dastur, 6th PAFAI, Bombay, India (1982).

20. W von Sturm and G Mansfeld, Chem Zeit, 99, 69 (1975).

21. C Vuilleumier, P Rebetez and N Freiburghaus, Unpublished results (2011).

22a. W Renold, R Näf-Muller, U Keller, B Willhalm and G Ohloff, Helv Chim Acta, 57, 1301 (1974).

22b. L Kharebava and A Tsirgvava, Chai Kul'tura I Pr-vo, Tbilisi, 2, 26 (1979).

22c. A Sardzhveladze, I Chernavina and L Kharebava, Subtrop Kul't, 6, 78 (1985).

23. P Werkhoff, G Krammer, S Brennecke, M Roloff and H Bertram, Food Review Int, 18, 103 (2002).

24. For a non-granted patent, see P. Teisseire, M. Plattier, FR 7046407 (1970).

25a. G Fräter, J Bajgrawicz and P Kraft, Tetrahedron, 54, 7633 (1998).

25b. P Kraft, J Bajgrowicz, C Denis and G Fràter, Angew Chem Intl Ed, 39, 2980 (2000).

26a. N Krause, S Ebert and A Haubrich, Liebigs Ann Chem, 2409 (1997).

26b. N Krause and S Ebert, Eur J Org Chem, 3837 (2001).

26c. E Wenkert, C Vial and F Näf, Chimia, 46, 95 (1992).

27. T Yamada, H Fujisawa and H Tanaka, EP 399788 (1989).

28. T Shono, M Okawa and N Nishiguchi, J Am Chem Soc, 97, 6144 (1975); K Crawford, V Rautenstrauch and A Uijttewaal, Synlett, 1127 (2001).

29. B Winter, US 5302745 (1994).

30. B Winter, C Chapuis and R Brauchli, Helv Chim Acta, submitted (2012).

31. RL Snowden, P Sonnay and S Linder, Unpublished results (1992).

32. E Demole, Fragrance Chemistry, the Science of the Sense of Smell. Edit, E Theimer, Acad Press, New York, 349 (1982).

33. Z Jingyao, L Guomei, S Wei and S Jing, Youji Xuaxu, 6, 490 (1985); Z Jingyao, L Guomei and S Qing, Huaxue Shijie, 27, 490 (1986); L Guomei, Kexue Tongboao, 29, 1419 (1983).

34. D Anderson and G Fràter, EP 953562 (1999); P Oberhänsli, DE 2008833 (1970).

35. K Shimizu and F Matsushita, US 7897802 (2011).

36. V Rautenstrauch and J-J Riedhauser, WO 96000206 (1994).

37. K Shimizu and F Matsushita, WO 2007/4442 (2007).

38. U Ravid and R Ikan, J Org Chem, 39, 2637 (1974); U Ravid, R Ikan and R Sachs, J Agric Food Chem, 23, 835 (1975).

39. K Sisido, S Kurozumi and K Utimoto, P.&E.O.R., 7/8, 267 (1969).

40. P Dubs and R Stüssi, Helv Chim Acta, 61, 998 (1978).

41. T Shono and N Kise, Tetrahedron Lett, 31, 1303 (1990); T Shono, N Kise, T Fujimoto, N Tominaga and H Morita, J Org Chem, 57, 7175 (1992). 10329 (2001); M Matsui, K Mori, T Ogawa, T Kitahara and Y Warita, JP 53108950 (1977); M Matsui, K Mori, T Ogawa, T Kitahara and Y Katsuta, JP 61017531 (1985).

42. F Näf and R Decorzant, US 5760277 (1998).

43. D Dobbs, K Vanhessche, E Brazi, V Rautenstrauch, J-Y Lenoir, J-P Genet, J Wiles and S Bergens, Angew Chem Int Ed, 39, 1992 (2000).

44a. R Nishida, T Acree and H Fukami, J Agric Food Chem, 33, 425 (1985).

44b. R. Nishida, T. Acree, H. Fukami, Agric. Biol. Chem, 49, 769 (1985).

45. V Rautenstrauch, K Vanhessche, J-P Genet and J-Y Lenoir, WO 9718894 (1997).

46. D Dobbs, K Vanhessche, V Rautenstrauch, WO 9852687 (1998).

47. J Wiles, S Bergens, K Vanhessche, D Dobbs and V Rautenstrauch, Angew Chem Int Ed, 40, 914 (2001).

48. V Rautenstrauch, X Hoang-Cong, R Churlaud, K Abdur-Rashid, R Morris, Chem Eur J, 9, 4954 (2003).

49. C Molinaro, S Shultz, A Roy, S Lau, T Trinh, R Angelaud, P O'Shea, S Abele, M Cameron, E Corley, J-A Funel, D Steinhuebel, M Weisel and S Krska, J Org Chem, 76, 1062 (2011).

50. T Perrard, J-C Plaquevent, J-R Desmurs and D Hébrault, Org Lett, 2, 2959 (2000).

51. F Liu, H Qiang, Z Minsheng, X Zhang, A Lei, Org Biomolecular Chem, 5, 3531 (2007).

52. O Cresp, J Cavallier, P-A Blanc and A Morillas, Perfum Flavor, 36(11), 24, (2011); A Boix Camps, Perfum Flavor, 32(11), 40 (2007).

53. L Crabalona, C Rend Acad Sci, 264, 2074 (1967).

54. R Nishida and T Acree, J Agric Food Chem, 32, 1001 (1984).

55. R Näf, 35th Int Symp Essent Oils, Taormina, Italy (2004).

56. R Näf, In: Citrus Oils, Composition, Adva nced Analytical Techniques, Contaminants, and Biological Activity. Edits, G Dugo and L Mondello, CRC Press, London, 463 (2011).

57. S Katayama and H Iwabuchi, Food, Food Ingred J Japan, 202, 55 (2002).

58. T Yamanishi, M Kawatsu, T Yokoyama and Y Nakatani, Agric Biol Chem, 37, 1075 (1973).

59. A Kobayashi, M Kawamura, Y Yamamoto, K Shimizu, K Kubota and T Yamanishi, Agric Biol Chem, 52, 2299 (1988).

60. T Baker, R Nishida and W Roelofs, Science, 214, 1359 (1981); Y Koda, Y Kikuta, T Kitahara, T Nishi and K Mori, Phytochem, 31, 1111 (1992).

61. M Beale and J Ward, Nat Prod Rep, 533 (1998); O Miersch, R Kramell,

B Parthier and C Westernack, Phytochemistry, 50, 353 (1999).

62. B Parthier, Bot Acta, 104, 446 (1991); M del Mar Caja, G Blanch and M Ruiz del Castillo, J Agric Food Chem, 56, 5475 (2008).

63. W Boland, J Hopke, J Donath, J Nüske and F Bublitz, Angew Chem Int Ed, 34, 1600 (1995); G Sembdner and B Parthier, Annu Rev Plant Physiol Plant Mol Biol, 44, 569 (1993).

64. E Farmer and C Ryan, Proc Nat Acad Sci USA, 87, 7713 (1990).

65. B Vick, D Zimmermann, Biochem Biophys Res Commun, 111, 470 (1983); B Vick and D Zimmermann, Plant Physiol, 75, 458 (1984).

66. I Whitehead, WO 9618742 (1994).

67. T Sarkar and B Ghorai, J Indian Chem Soc, 76, 693 (1999).

68. G Büchi and B. Egger, J Org Chem, 36, 2021 (1971).

69. F Näf, DE 2163868 (1972); F Näf and R Decorzant, Helv Chim Acta, 61, 2524 (1978).

70. H Kataoka, T Yamada, K Goto and J Tsuji, Tetrahedron, 43, 4107 (1987).

71. J Lem, K Vanhessche and C Mahaim, WO 2007/056129 (2007).

72. H Tanaka and S Torii, J Org Chem, 40, 462 (1975).

73. C Chapuis, C Cantatore and J-Y de Saint Laumer, Helv Chim Acta, 89, 1258 (2006).

74. F Fringuelli, F Pizzo, A Taticchi, T Hall and E Wenkert, J Org Chem, 47, 5056 (1982); F Fringuelli, F Pizzo, A Taticchi and E Wenkert, Synth Commun, 9, 391 (1979); B Maurer and A Hauser, Helv Chim Acta, 65,

75. H Matsuura, F Ohmori, M Kobayashi, A Sakurai and T Yoshihara, Biosci Biotechnol Biochem, 64, 2380 (2000); O Miersch, Z Naturforsch B, 46, 1727 (1991).

76. K Weinges, H Gethöffer, U Huber-Patz, H Rodewald and H Imgartinger, Liebs Ann Chem, 361 (1987).

77. H Hailes, B Isaac and M Javaid, Tetrahedron Lett, 42, 7325 (2001).

78. H Takeda, H Watanabe and M Nakada, Tetrahedron, 62, 8054 (2006).

79. K Suzuki, K Inomata and Y Endo, Org Lett, 6, 409 (2004).

80. F-P Montforts, I Gesing-Zibulak and W Grammenos, Helv Chim Acta, 72, 1852 (1989).

81. C Fehr, EP 841331 (1997); C Fehr, J Galindo, O Etter and E Ohleyer, Chimia, 53, 376 (1999); C Fehr and J Galindo, Angew Chem Int Ed, 39, 569 2000).

82. G Stork, A Ozorio and A Leong, Tetrahedron Lett, 5175 (1978); Inst Org Chem JW Goethe Univ, Synform, 1, 33 (1983); Inst Org Chem JW Goethe Univ, Synform, 3, 125 (1985).

83. C Fehr, E Ohleyer and J Galindo, EP 1048643 (2000).

84. T Kitahara, K Hamaguchi, Y Warita, Y Takagi and K Mori, Agric Biol Chem, 50, 1867 (1986).

85. The absolute configuration as depicted in the following should be inverted: A. Geiser, diploma work, University of Heidelberg, (1995); OMCOS 9, Göttingen (1997); G Helmchen, J Organomet Chem, 576, 203 (1999).

86. C Fehr, E Ohleyer and J Galindo, US 6262288 (2001); C Fehr and N Bifulci, Unpublished results (1999).

87. G Knühl, P Sennhenn and G Helmchen, J Chem Soc, Chem Commun,

1845 (1995); E Berger and G Helmchen, Eur J Org Chem, 419 (2000).

88. S Simonich, W Begley, G Debaere and W Eckhoff, Environ Sci Technol, 34, 959 (2000).

89. F Begnaud, C Debonneville and A Chaintreau, J Sep Sci, 34, 446 (2011).

90. C Chapuis, C Cantatore, P Fankhauser, R Challand and J-J Riedhauser, Helv Chim Acta, 92, 1782 (2009).

91. R Gatermann, S Biselli, H Hühnerfuss, G Rimkus, M Hecker and L Karbe, Arch Environ Contam Toxicol, 42, 437 (2002).

92. S Escher and E Oliveros, J Am Oil Chem Soc, 71, 31 (1994); for OCT3 methyl jasmonate, see E Weiler, T Albrecht, B Groth, Z Xia and M Luxem, Phytochem, 32, 591 (1993).

93. O Miersch, Zeit Naturforsch B: Chem Sci, 46, 1727 (1991); H Seto, S Fujioka, H Fujisawa, K Goto and H Nojiri, Biosci Biotech Biochem, 60, 1709 (1996); D Galka, S Ambrose, A Ross and S Abraham, J Label Compd Radiopharm, 48, 797 (2005).

94. W Kerr, M Mc Laughlin and P Pauson, J Organomet Chem, 630, 118 (2001); M Herth, M Thorpe, R Ferrieri, J Label Compd Radiopharm, 48, 379 (2005).

95. V Rautenstrauch, P Megard, J Conesa and W Kuester, Angew Chem Int Ed, 29, 1413 (1990).

96. E Davies, Chemistry World, 6(2), 40 (2009).

97. W Paget, D Reichlin, RL Snowden, E Walborsky and C Vial, US 5726345 (1998); A Herrmann, US 6218355 (2001).

98. J Hall, J Sanders and J Siano, US 4609754 (1986); D Anderson and G Fräter, US 6207857 (2001).

99. K Dastur, US 4173584 (1979).

100. S Rochat, C Minardi, J-Y de Saint Laumer and A Herrmann, Helv Chim Acta, 83, 1645 (2000).

Hemani Aromatics

...where fragrance is the only identity

Manufacturers of Industrial Perfumery Compounds for :-

Personal Care

- Beauty Soaps
- Body Lotions
- Creams
- Hair Oil
- Shampoos
- Shaving Aid
- Talc

Perfume Concentrates

- Body Oils
- Colognes
- Deodorants
- EDT Sprays

Home Care

- Floor Cleaners
- Laundry Detergents
- Laundry Soap
- Liquid Soaps

Incense Sticks

- Designer
- Floral
- Fruity
- Herbal
- Spicy
- Woody

A-261 MIDC, TTC INDUSTRIAL AREA, MAHAPE, NAVI MUMBAI 400701, INDIA TEL: +91 22 27782698 FAX: +91 22 27782697
Email : info@hemaniaromatics.com URL: www.hemaniaromatics.com

Givaudan
fragrance ingredients

Soofi

Trust • Values • Performance | **Since 1970**

Celebrating
fifty years
Committed to Integrity

SOOFI TRADERS

Authorised Distributors in India

Address : B Wing, 601, Kohinoor City Commercial 1, Kirol Road, Kurla West, Mumbai 400070, INDIA.
T : +91-22-25046900/01 • E : sales@soofi.in • W : www.soofi.in

LAPUA 1880

CITRUS

Essential Oils & Specialities

Bergamot

Blood Orange

Lemon

Lime

Mandarin

Neroli Phase

Tangerine etc

Soofi

Trust • Values • Performance | **Since 1970**

Celebrating *fifty* years

Committed to Integrity

SOOFI ENTERPRISES ▪ SOOFI TRADERS

Indenting Agents, Importers & Distributers

Address : B Wing, 601, Kohinoor City Commercial 1, Kirol Road, Kurla West, Mumbai 400070, INDIA.
T : +91-22-25046900/01 • E : sales@soofi.in • W : www.soofi.in

Celebrating

fifty years

Committed to Integrity

A momentous occasion for our organisation indeed!

Late Dr. Ashok Manghnani laid strong business foundations
TRUST = Best Business Currency
VALUES = Ethical Business Practices
PERFORMANCE = Meeting Expectations

Team SOOFI reiterates it's commitment to quality performance, business relationships and progressive partnerships.

Our profound thanks and gratitude to our Customers, Business Partners and Principals in this journey.
With your support, we shall reach new milestones……

OUR PRINCIPALS

Ecogreen Oleochemicals
CRODA
Givaudan engage your senses
Louis Dreyfus Citrus Brazil
KLK OLEO
PQ Silicas
CAPUA 1880 CITRUS OILS AND CITRUS SPECIALITIES
GLOGERM

Soofi
Trust • Values • Performance | Since 1970

SOOFI ENTERPRISES ▪ SOOFI TRADERS
Indenting Agents, Importers & Distributers

Address : B Wing, 601, Kohinoor City Commercial 1,
Kirol Road, Kurla West, Mumbai 400070, INDIA.
T : +91-22-25046900/01 • E : sales@soofi.in • W : www.soofi.in

Musks & Fragrance

Indentors for : AROMATIC CHEMICALS & ESSENTIAL OILS

911/A, 'B' Wing, Kanakia Wall Street, Near Holy Family Church,
Andheri Kurla Road, Andheri (East), Mumbai - 400093.(India).
Tel. : +91-22-68151800(100 lines) E-Mail : indentor@muskfrag.com
Web : www.muskfrag.com

WE INDENT FOR

Orange Oil CP
Lemon Oil CP
Bitter Orange Oil CP
Mandarin Oil CP Green
Mandarin Oil CP Red
Tangerine Oil CP
Persian Lime Oil CP

ARIPE CITRUS AGRO INDUSTRIAL LTDA.(BIO-CITRUS)

BRAZIL

HOPS OIL

PRODUCT DETAILS

BOTANICAL NAME	HUMULUS LUPULUS
COMMON NAME	"HOPS"
ORIGIN	
PLANT PARTS USED	FLOWERS KNOWN AS CONES OR STROBILES
EXTRACTION METHOD	STEAM DISTILLATION
COLOR	GOLDEN YELLOW
ROMATIC DESCRIPTION	FRESH AND SWEET WITH A SOMEWHAT SHARP (BITTER), EARTHY/ HERBACEOUS AROMA
PLANT FAMILY	

CHEMICAL COMPOSITION:-

a-caryophyllene(19.9%-21.5%),b-myrcene(6.1%-6.7%).,gamma-cadinene,delta-cadinene,a-muurolene

WHAT IS HOPS ESSENTIAL OIL?

Hop oil is steam-distilled from hop flowers. Also known as Humulus lupulus, hop is a perennial plant that produces vines from a permanent root stock or crown. From the root stock also grows underground stems called rhizomes. Attached to these are numerous buds which are used for vegetation.

Hops are dioecious, meaning they have separate male and female species. Male plants possess no commercial value, except to pollinate the female plant. The female produces the flowers required for the brewing of beer. It also has the plant's therapeutic properties.

Hops belong to the same plant family as marijuana. Like hemp, hop stems were used for fiber to make cloth and paper. Across history, the hop plant was used as a sedative in the United States and Europe.

When used therapeutically, hop oil also induces a sedative effect, as well as calming, antibacterial, and astringent characteristics.

THE HISTORY OF HOPS OIL

Both hops essential oil and the plant have been used around the world for hundreds of years. Documentation of hops cultivation dates back to 736 AD in the Hallertau region of Germany, while the first records of using hops in the brewing of beer begin in the late 11th century. Though hops are best known for their role as a source of flavor in brewing beer, providing a citrus or bitter flavor, they have also been used in herbal teas, soft drinks, and herbal remedies.

In the past, public perception of hops differed depending on the region of the world. In the early 16th century, Britain saw hops as a "wicked weed" and condemned its use, and it was almost completely banned in Norwich in the late 15th century. In Germany, on the other hand, use of hops became an act of rebellion by German Princes at the start of the Reformation, protesting the Catholic Church's taxation on gruit , a mixture of herbs and botanicals used to flavor and preserve beer.

While today brewing remains the most common use for hops, it is also found in a range of supplements and remedies marketed for sleep and relaxation. The essential oil derived from hops is an important component of many aromatherapy treatments.

USES FOR HOPS:-

PAIN RELIEF

Hops oil is most often used as a source for pain relief. Its combination of anti-inflammatory and sedative properties make it one of the best essential oils for this purpose. The oil can primarily be used topically or via aromatherapy for pain relief. However, a few drops added to an herbal tea can also be used for mild pain relief.

The hops essential oil can be mixed with a carrier oil and applied topically to the area in pain in order to create a powerful pain-fighting effect. For example, massaging the hops oil mixture on the temples can relieve a headache or a migraine, while massaging the oil into the muscles can alleviate pain after exercise or a long day at work.

Placing the oil in a diffuser as part of an aromatherapy treatment can provide general mild pain relief with the added, more noticeable sedative effect. It is best to use this method shortly before heading to sleep to allow for a full night's rest undisturbed by muscle or joint aches.

Hops oil is also used as a natural treatment for the pain associated with menstrual cramps. The sedative properties cause the muscles in the area to relax, reducing overall discomfort.

IMPROVES SEXUAL PERFORMANCE

For generations, hops essential oil has been used by men to enhance their sexual performance, and more particularly, to extend it. This is a common cure for premature ejaculation, as it soothes the body and makes certain vital elements less sensitive to sexual stimulation.

INSOMNIA OR RESTLESSNESS

Because of its sedative properties, thought to be caused by alpha acids, hops oil is one of the go-to natural remedies for insomnia or restlessness. Not only does it help with falling asleep, but it reduces stress and encourages relaxation, resulting in a more comfortable and peaceful sleep.

The best way to use hops oil as a sedative is through an essential oil diffuser. In diffusers, a small amount of oil is placed in the diffuser with water. The diffuser then runs through the night, creating a light mist with a combination of hops essential oil and water. Some diffusers, like advanced nebulizing diffusers and portable diffusers don't require water to achieve the same effect. Traditional diffusers provide continual benefit from the properties of the essential oil throughout the night, while portable diffusers provide these benefits at any time.

RESPIRATORY HEALTH

Though hops cannot resolve all respiratory issues, it can help reduce the seriousness of many, and those that are caused by irritation and inflammation in the lungs in particular. The hops essential oil helps to relax and soothe irritated areas while its compound properties reduce inflammation.

Hops essential oil also has anti-viral properties, making it a powerful tool in fighting or preventing colds. For example, a nightly course of hops essential oil during the week could potentially eliminate a cold before it ruins your entire weekend. At the same time, reduction in irritation and inflammation can help reduce respiratory-related symptoms of the cold.

Once again, the best results come from using the oil in an aromatherapy session, usually with a diffuser. Alternatively, some people place a few drops of the oil on a cloth and place it near the drain while taking a hot shower. The oils join the steam in the shower, helping open up nasal passages and improving breathing.

SKIN AND HAIR HEALTH

Hops essential oil can be used to treat skin conditions, improve the appearance of skin, and improve hair health. In all these cases, the essential oil might be mixed with other oils or ingredients and then applied to the particular area.

The antiviral and anti-inflammatory properties in hops essential oil are known to reduce skin irritation as well as symptoms of psoriasis. By combining the oil with small amount of water, the solution can be applied topically to the skin in the affected area.

Certain volatile compounds in hops oil react with hair follicles in ways that make for stronger, thicker, and better-looking hair. A natural hair treatment can be made using hops essential oil, apple cider vinegar, and water.

HAIR CARE

When used in combination with other natural oils on the hair, hops essential oil can improve the sheen and strength of the hair thanks to its potent volatile components that interact with hair follicles and natural oils to improve the appearance and health of your hair.

STRESS AND ANXIETY

The relaxing and sedative qualities of hops essential oil is what it is best known for. It is a powerful nervine and works wonders on stress-related conditions and nervous tension. The use of essential oils is steadily becoming one of the most popular stress control techniques.

ELIMINATING ULCERS

The antiviral and anti-inflammatory properties of hops oil make it good for fighting ulcers. However, it is most effective when combined with other essential oils that have antibacterial properties, such as peppermint or lavender.

HOW DOES HOP OIL WORK?

You may experience the benefits of hop oil in a number of ways. You may use it in a bath or through steam inhalation. It also blends well with citrus oils, and nutmeg and pine oils.

Exercise caution when using this essential oil. Exposure to air for long periods can cause the oil to form resins, which can affect the fragrance and efficacy of the oil. Proper storage of hop oil can help avoid this and retain stability for up to a year. Store it in a tightly capped glass container, in a cool, dark place

RESEARCH ON HOPS OIL:-

A 2013 study titled, "From Wort to Beer: The Evolution of Hoppy Aroma of Single Hop Beers produced by Early Kettle Hopping, Late Kettle Hopping and Dry Hopping" sheds some light on how the fermentation process affects hop volatiles. My understanding of their results shows a big decrease in hop oils studied throughout the brewing process, with the majority of hop oils decreasing after the fermentation process.

The researchers took wort and beer samples at different times throughout the brewing process and immediately stored them at -4F until they were examined. The first set of charts below shows that the floral oils compounds (like myrcene) "significantly" decreased as a result of fermentation. On the other hand, linalool seemed to show the greatest ability to stick around during fermentation, but still decreasing nearly in half. The second set of charts shows that the noble or spicy hop oil compounds also decreased significantly during fermentation and nearly disappeared after centrifugation (which suggests to me that the yeast seems to strip some of these volatile oils as it is separated from the beer). The overall conclusion from this analysis was that fermentation and centrifugation were identified as the crucial processes steps for decreasing hop oil compounds.

Reports have indicated that preparations of hops have sedative-like activity in frogs (Munch et al., 1933; Staven-Groenberg, 1928; Steidle, 1932), pigeons (Sikorski and Rusiecki, 1938), mice(Lee et al., 1993; Prokopenko et al., 1986), goldfish (Bouchardy, 1953), and golden carp (Grumbach and Mirimanoff, 1955). An understanding of the biochemical mechanism and the conclusive identification of compounds responsible for such activity have not yet been achieved. Sikorski and Rusiecki (1938) reported that both humulone and lupulone were "strongly sedative to pigeons and small birds, somewhat less active on

mice". A degradation product of these bitter acids, the five-carbon olefinic alcohol 2-methyl-3-buten-2-ol, was shown to be sedative in mice (Wohlfart et al., 1982). The oft-cited claim is that hops lose their activity with age (Rusiecki, 1938; Youngken, 1950). Wohlfart et al. 1982 showed that 2-methyl-3-buten-2-ol is nearly undetectable in fresh hops and reaches its maximum concentration after two years of storage at room temperature. Thus, if this compound can fully explain the sedative activity attributed to this plant, then it must be formed in vivo from hop constituents, such as bitter acids, that would then be considered as "pro-drugs", analogous to the case of the estrogenic activity. Hänsel and Wohlfart (1980) asserted that the sedative effect of hops was not due to its content of myrcene, which was since shown to have analgesic activity in mice (Lorenzetti et al., 1991; Rao et al., 1990). Despite numerous attempts to characterize the CNS-active constituents in hops, it is believed that the identity of all of the compounds responsible for sedative activity in humans, much less their biochemical mode of action, have yet to be established (Schulz et al., 2001).

HOP OIL SIDE EFFECTS:-

While hop oil is considered non-toxic and non-irritant, it may still cause sensitizations in certain people. Like other essential oils, it should not be used without dilution. Blend it with a carrier oil like coconut oil, olive oil, or almond oil. Afterward, you can check for any adverse effects through a skin test, or by simply applying a drop of hop oil on a small area of your skin.

Despite the many benefits of hop oil, it is always wise to use it, as well as other essential oils, with the guidance of an experienced aromatherapy practitioner or with the advice of your doctor.

REFERENCES:-

- *ARCTANDER, STEFFEN FROM – (PERFUME AND FLAVOUR MATERIALS OF NATURAL ORIGIN)*
- *BRAIN M. LAWREN FROM – (ESSENTIAL OILS) CHOPRA,*
- *R.N, NAYAR S.L., GLOSSARY OF INDIAN MEDICINAL PLANTS (COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH), (WEALTH OF INDIA),*
- *DR. K.M. NADKARNI'S (INDIAN MATERIA MEDICA)*
- *W.A.POUCHER FROM – (POUCHER'S PERFUMES, COSMETICS AND SOAPS)*
- *S.N.MAHINDRU FROM – (INDIAN PLANT PERFUMES)*
- *PERFUMER & FLAVORIST MAGAZINE*
- *AND PERSONAL DISCUSSION WITH PROFESSOR DR. SUDHA JAIN, DR. SHAKTI VINAY SHUKLA (PRINCIPAL DIRECTOR FFDC KANNUJ) & RAKESH LAB ETC.*

YOGESH DUBEY
Rakesh Group (President)
Essential Oil Association of India (President)

Thakker Group
a promise for quality

Importers and Stockist of

TEXTRON

HIGHEST QUALITY SUPPLIER OF OILS

READILY AVAILABLE

AVACADO OIL	*BORAGE OIL*
EVENING PRIMROSE OIL	*EVOIL ALMOND OIL*
EVOIL APRICOT KERNEL OIL	*EVOIL SESAME OIL*
EVOIL WHEATGERM OIL HVE PLUS	*GRAPESEED OIL*
HAZELNUT OIL	*HEMPSEED OIL*
JOJOBA OIL CLEAR	*JOJOBA OIL GOLDEN*
MACADAMIA NUT OIL	*OLIVE OIL POMACE*
OLIVE OIL EXTRA VIRGIN	*PUMPKIN SEED OIL*
ROSE HIP OIL	*SHEA BUTTER*
SWEET ALMOND OIL	*WALNUT OIL*

AND MANY OTHER PRODUCTS ON DEMAND

PHARM AROMATIC CHEMICALS

507 NAIN KRUPA BUILDING, 118/122 KAZI SYED STREET,
MASJID BUNDER WEST, MUMBAI – 400 003

ASHISH THAKKER 9870031751
MAHESH THAKKER 9821334436

TELEPHONE : 022 23432526/23448032 EMAIL : thakker_group@outlook.com

Betel leaves a Divine crop

A.P.K Padmanabhan
apkpadmanabhan123@gmail.com
Mob:9946446182

Introduction

Betel leaf, a vine from the family of piperaceae popularly known as PAN is an important cash crop in India.

Pan possess many medicinal properties with healing powers of auspicious plant bestowed on mankind, naturally pan deserves the name GREEN GOLD

DESCRIPTION AND DISTRIBUTION

Betel vine is cultivated in many states in India, predominantly in west Bengal, Orissa, UP, MP, Gujarat, Karnataka, Tamil Nadu, AP and Kerala. It is also cultivated in Pakistan, Malaysia, Thailand, Sri Lanka and some parts of Africa. Pan cultivation is spread to around 50000 hectares of land in India and provides livelihoods of 2million people.

Betel vine requires moist tropical condition with cool shade, higher humidity and regular supply of soil moisture for the healthy growth of crop production. With temperature within 10 degrees centigrade to 44 centigrade is favorable and The crop can be raised in a variety of soil however clay looms is the best. Soil with poor drainage alkaline and saline is not conducive for betel cultivation.

The heart shaped betel leaf is having amazing medicinal constituents filled with rich minerals and vitamins that provide healing powers of many health problems. Essential oil, in the form of globules mesophyll tissues of leaf lamina. There are few varieties of pan vain and its constituents may vary depending upon agro climatic and soil conditions. Essential oil also occurs in superficial tissues of petiole.

Hydro distilled of fresh pan leaves yield 0.3% to 0.95% oil. The oil is pale yellow to light brown color with characteristic strong odor and distinguished flavor of pan leaves. Generally fresh pan is cut into few pieces and hydro distilled and open steam is injected for distillation of dried betel leaves. Oil is

treated with little Na_2So_4 to remove traces of water in the oil and packed in glass /aluminum container. Specific gravity of oil is 0.85 to 1.09

Extraction

Pan is extracted with suitable solvent and concentrated to obtain a thick paste material containing medical properties for different applications. From aqueous water of pan few byproduct also prepared such as PAN FRESH, PAN GARGLE AND PAN ARRAC enriching with spices against indigestion, infections, harsh voice and bad odor in the mouth after taking food.

COMPONENTS OF DISTILLED PAN OIL

More than 50 components are reported in pan oil. The major components are :

- Chavicol
- Eugenol
- Estrogol
- Methyleugenol
- 1_8cineole
- B,_caryophyllene
- Carotene
- Terpenyal acetate

- Iso eugenol etc

The betel leaves is also loaded with minerals and vitamins

Health benefits from betel leaf and value added products

- Refreshing breath
- Enhance digestion
- Healthy gums, prevention of tooth decay
- Prevent oral infections
- Prevent urinary infections
- Skin problems
- Relieving pain boils and cuts
- Relieving rheumatic pain
- Anti diabetic properties
- Treating plaque
- Mental energy to work hard etc

According to various research work and investigation carried out by the scientists from agriculture department and Ayurvedic scholars in Kerala have undoubtedly proved and published the amazing results of medicinal powers of betel leaves. They conducted studies on THIRUR BETEL LEAVES in Kerala. This variety of pan is having enhanced content of eugenol , methyl isoeugenol etc that provide more taste and pungent. Thick leaves evade quick fading and able to transport to distant places.

It is not a surprise to know that THIRUR BETEL LEAVES has been awarded **Geographical Induction (GI)** by the government of India recently.

North India consumes more quantity of pan than south India. Chewing of pan among younger generation has reduced on various reasons. Huge quantities of pan is spoiled due to:

- Bumper crop
- Strike and road blood
- Heavy rain, floods and other unforeseen reasons.
- Perishable commodity

Hence to overcome and nullify the incurring heavy loss to farmer's traders, it is necessary to convert pan into value added products in to oil, extracts and similar products to cater the following industries for better returns.

- Food industry
- Flavor industry
- Perfume industry
- Cosmetics and aroma industries
- Toffee
- Beverages
- Soap and toiletries
- Pharmaceutical and allied industries.

CONCLUSION

There is sound scope for pan cultivation as well as converting value added products from pan to cater various industrial requirement as well as export houses, thereby regaining the glory of pan cultivation for better remuneration among farmers, manufacturers, traders above all strengthening Indian economy.

Ref.Elsi C. R.Susan George Thirur pan towards DI.Kerala karshakan December 2018.

EMBEE CORPORATION

DEALERS IN AROMATIC CHEMICALS AND ESSENTIAL OILS

ABITOL

BENZOIN SUMATRA ABSOLUTE

AMBERMOR -EX

AQUAMOR

CINNAMON BARK

HERCULYN D

AMYRIS OIL

VETIVERT OIL HAITI

ALPHA DAMASCONE

BUCHU BETULINA OIL

CINNAMON LEAF OIL

CLOVE LEAF OIL RECTIFIED 85-86%

DAMASCENONE

DAMASCENONE 93%

MYSOLENE SANDAL

ORANGE OIL COLD PRESSED

ORANGE OIL EXTRA SWEET

PATCHOULI OIL

VETIVERYL ACETATE

BETA DAMASCONE

FOR MORE INFORMATION WRITE US ON

503 NAIN KRUPA BUILDING
118/KAZI SYED STREET,
MASJID BUNDER (WEST)
MUMBAI – 400 003
TEL : 022 23432526/23448032

Thakker Group
a promise for quality

WWW.THAKKERGROUP.CO.IN
EMAIL : thakker_group@outlook.com

CONTACT PERSON:
ASHISH THAKKER 9870031751

MAHESH THAKKER 9821334436

PUSHPA FLAVOUR & FRAGRANCE PVT LTD

506, SYNERGY, Mamlatdarwadi Road Extn., Kanchpada, Malad (West),
Mumbai-400064, INDIA.
PH : 022-28811931/32/8380081933
EMAIL : pushpaflav@gmail.com & office.pushpaflav@gmail.com

Distributor in India for –

FRUTAROM
FOUNDED 1933

Fragrance And Flavour Ingredients :

ALDAROME (Adoxal)
ALDEMONE (Precyclemone B)
ACETALDEHYDE
2-ACETYL PYRAZINE
2-METHYL PYRAZINE
2-METHYL-2-PENTENOIC ACID
FURFURYL THIOPROPIONATE
GRAPEFRUIT MERCAPTEN
CILANTRO ALDEHYDE (Trans-2-Dodecenal)
CIS JASMONE
2-ISOPROPYL-4-METHYL THIAZOLE
CIS-6-NONENAL
MELONYL (Melonal)
DIMETHYL SULPHIDE
p-MENTHA-8-THIOL-3-ONE (THIOMENTHONE)
NUTMEG OIL
ORANGE TERPENES(D-LIMONENE)
ORANGE OIL 5 FOLD,10 FOLD
PAMPLEROM (METHYL PAMPLEMOUSSE)
STYRAX RESINOID
TRANS-2-HEXENYL ACETATE
FURFURAL
FURFURYL ACETATE
FURFURYL MERCAPTAN
FURFURYL THIOACETATE
FURFURYL PENTANONE
2-ETHYL-3-METHYL PYRAZINE
BALSAM TOLU/BALSAM PERU
LABDANUM RESINOID
METHYL OAKMOSS (Evernyl)
2-METHYL BUTYRIC ACID
2,3, PENTANEDIONE
SULFUROL
TRANS-4-DECENAL
TRANS-2-HEXENAL
TRANS-2-HEXENOL
PADMA
3-PROPYLIDENE PHTHALIDE
TRANS-2-OCTENAL


MPE
INTRODUCING
MATIÈRES PREMIÈRES ESSENTIELLES
FRANCE
PURE NATURAL ESSENTIAL OILS
AMYRIS OIL
ARMOISE OILBAY SAINT THOMAS CRUDE/RECTIFIED
BUCCHU BETULINA OIL
CAJEPUT OIL
CANANGA OIL
CEDARLEAF OIL
CEDARWOOD OIL VIRGINIA /ATLAS/TEXAS
CLARYSAGE OIL
COPAHU BALSAM OIL
CORIANDERLEAF OIL
CYPRESS OIL
GERANIUM BOURBON REUNION
GALBANUM OIL
GRAPEFRUIT OIL FOLDED 5X/10X
JUNIPERBERRY OIL
LAVANDIN OIL ABRIALIS/GROSSO
LAVANDIN SUPER
LEMON OIL COLD PRESSED
LEMON OIL TERPENELESS
LOVAGELEAF / ROOT OIL
MANDARIN OIL COLD PRESSED – GREEN/YELLOW/RED
MYRRH OIL
NIAOULI OIL
OLIBANUM OIL
PETITGRAIN OIL BIGARADIER /CITRONNIER /MANDARINIER
PIMENTO LEAF/BERRY OIL
ROSE OIL
PINE OIL SACHALINENSIS /SIBERIAN / SYLVESTRIS
ROSEMARY OIL
SAGE OIL OFFICINALIS
SANDALWOOD OIL NEW CALEDONIAN
TAGET OIL
VERBENA OIL
WHITE THYME OIL
ANGELICA ROOT / SEED OIL
BERGAMOT OIL (VARIOUS GRADES)
CADE OIL
CALAMUS OIL
CARAWAY OIL
CHAMOMILE OIL BLUE
CHAMOMILE OIL ROMAN
COGNAC OIL GREEN & WHITE
COPAHU BALSAM RECTIFIED
CORIANDER SEED OIL
CISTUS OIL
GERANIUM OIL EGYPT
GRAPEFRUIT OIL COLDPRESSED
HELICHRYSUM OIL
LAUREL LEAF OIL
LAVANDIN SUMIAN
LAVENDER 40/42, 50/52
LEMON OIL FOLDED 5 X / 10 X
LIME OIL COLDPRESSED / DISTILLED
MARJORAM OIL
NEROLI OIL
MYRTLE OIL
ORIGANUM OIL
PARSLEY HERB / SEED OIL
PERU BALSAM NATURAL
RED THYME OIL
RUE OIL
RHODINOL NATURAL
SWEET ORANGE OIL /5X/10X
SAVORY OIL
TARRAGON OIL
VETIVER OIL
YLANG EXTRA, I /II/III
Exclusive Business Partner in India
PUSHPA FLAVOUR & FRAGRANCE PVT LTD
506, SYNERGY, Mamlatdarwadi Road Extn., Kanchpada, Malad (West),
Mumbai-400064, India.
PH : 022-28811931/32/8380081933
EMAIL : pushpaflav@gmail.com & office.pushpaflav@gmail.com

MPE

INTRODUCING
MATIÈRES PREMIÈRES ESSENTIELLES
FRANCE

CONCRETES /ABSOLUTES / RESINOIDS

ALGUES ABSOLUTE
BEESWAX CONCRETE/ABSOLUTE
BASIL ABSOLUTE
BENZOIN SUMATRA RESINOID
BRAN ABSOLUTE/CONCRETE
CASTOREUM ABSOLUTE/RESINOID
COCOA ABSOLUTE
ENCENS RESINOID
FUCUS ABSOLUTE
GERANIUM ROSAT CONCRETE/ABSOLUTE
HELYCHRISUM CONCRETE
LABDANUM RESINOID
LAVANDIN CONCRETE/ABSOLUTE
MATE ABSOLUTE
MYRRH RESINOID
ORANGER CONCRETE/ ABSOLUTE
OSMANTHUS ABSOLUTE
SEAWEED ABSOLUTE
STYRAX RESINOID
TONKA BEANS ABSOLUTE
VANILLA ABSOLUTE

BASIL LINALOOL CONCRETE
BLACK CURRENT ABSOLUTE
CASSIE CONCRETE /ABSOLUTE
CIVET ABSOLUTE
ELEMI RESINOID
FENUGREEK ABSOLUTE
GENET CONCRETE / ABSOLUTE
HAY ABSOLUTE
JASMIN CONCRETE/ABSOLUTE
LAVENDER CONCRETE/ABSOLUTE
MARIGOLD CONRETE/ABSOLUTE
MIMOSA CONCRETE/ABSOLUTE
OPOPONAX RESINOID
ORIS BUTTER 8, 11, 15% IRON
ROSE CONCRETE/ABSOLUTE
SON CONCRETE / ABSOLUTE
TUBEROSE CONCRETE/ABSOLUTE
VIOLETLEAF CONCRETE /ABSOLUTE

Exclusive Business Partner in India

PUSHPA FLAVOUR & FRAGRANCE PVT LTD

506, SYNERGY, Mamlatdarwadi Road Extn., Kanchpada, Malad (West),
Mumbai-400064, India.
PH : 022-28811931/32/8380081933
EMAIL : pushpaflav@gmail.com & office.pushpaflav@gmail.com

PUSHPA FLAVOUR & FRAGRANCE PVT LTD

506, SYNERGY, Mamlatdarwadi Road Extn., Kanchpada, Malad (West),
Mumbai-400064,INDIA.
PH : 022-28811931/32/8380081933
EMAIL : pushpaflav@gmail.com & office.pushpaflav@gmail.com

EXCLUSIVE IMPORTER & DISRIBUTOR IN INDIA OF -

Lothar Streeck
GmbH & Co.KG. flavors & fragrances

Reconstituted Oils

LAVENDER OIL	LAVANDIN OIL	BOISE DE ROSE OIL	PETITGRAIN OIL
ROSEMARY OIL	NUTMEG OIL	YLANG YLANG OIL	LIME OIL
GERANIUM OIL DR			

STOCK ISTS OF -

1) XIAMEN BESTALLY BIOTECHNOLOGY CO. LTD.

2 ACETYL PYRAZIN	2 ACETYL THIAZOLE	2 ACETYL PYRIDIN
2 ACETYL FURAN	2 ACETYL 5 METHYL FURAN	ETHYL MALTOL
ACETOIN	DIACETYL	ETHYL BUTYRATE
E-2-M- BUTYRATE	FURANEOL	MALTOL
RASPBERRY KETONE	SULFUROL	WATERMELON KETONE

& OTHER FRAGRANCE / FLAVOUR INGREDIENTS

2) SHANGHAI ZUOMING, CHINA

ALPHA DAMASCONE 98%	BETA DAMASCONE 98%
DAMASCENONE PURE	DAMASCENONE TOTAL
CIS-3-HEXENYL BENZOATE	CIS-3-HEXENYL BUTYRATE
CIS-3-HEXENYL ISOBUTYRATE	CIS-3-HEXENYL ISOVALERATE

3) C.V. AROMA, INDONESIA

CLOVELEAF OIL	EUGENOL	ISO EUGENOL
GURJUN BALSAM OIL	GALANGAL OIL	GUM BENZOIN
PATCHOULI OIL PURE /STD.	NUTMEG OIL	VETIVERT OIL

4) INDIAN PURE SPICE ESSENTIAL OILS & OLEORESINS

BLACK PAPPER OIL	CARDAMOM OIL	CINNAMONLEAF OIL
CUMINSEED OIL	CELERYSEED OIL	CLOVEBUD OIL
CORIANDER OIL	COFFEE EXTRACT	COCOA EXTRACT
GINGER OIL	MACE OIL	NUTMEG OIL
TURMERIC OIL		

OUR NATURAL INGREDIENTS INSPIRE THE WORLD'S LEADING FRAGRANCES.

Essential Oil: Ajowan | Aniseed | Basil | Bay Leaf* | Black Pepper | Cabreuva Red* | Cajeput* | Calamus | Cardamom | Carrot Seed* | Cedarwood Virginia* | Celery Seed | Cinnamon Bark | Cinnamon Leaf | Citronella Java | Citronella Lemon | Clary Sage | Clove Bud | Clove Leaf | Coriander Leaf* | Coriander Seed | Cumin Seed | Curcuma Aromatica | Curry Leaf | Cypress | Davana | Dill Seed | Dill Weed | Eucalyptus Globulus 80 | Fennel Seed | Galangal | Geranium Egypt/China | Ginger Grass* | Ginger | Holy Basil* | Jatamansi* | Java Galanga | Lavandin Grosso | Lavender Officinalis | Lemongrass | Litsea Cubeba* | Mace | Marjoram* | Nutmeg | Palmarosa | Parsley Leaf* | Parsley Seed | Peppermint* | Petitgrain | Sage | Tagetes | Tea Tree | Thyme | Turmeric Leaf | Valerian Root | Vetivert | Ylang Ylang 3

Oleoresins: Black Pepper | Capsicum | Cardamom | Celery Seed | Clove Bud | Coriander Seed | Fennel Seed | Ginger | Mace & Nutmeg | Rosemary

SCFE: Black Pepper | Cardamom | Cinnamon | Cumin | Ginger | Nutmeg | White Pepper

Gums
Oils: Elemi | Galbanum | Myrrh | Olibanum Somalia/India | Opoponax | Styrax
Resinoids: Benzoin | Elerni | Labdanum | Oakmoss | Olibanum | Opoponax | Peru Balsam | Styrax

Eco Series
Oils: Bergamot | Cardamom | Geranium | Lavendar | Lavandin | Lemon | Lemongrass | Palmrosa | Rosemary | Vetrivert | Ylang
Resinoids: Benzoin | Labdanum | Oakmoss | Styrax | Tolu Balsam

Natural ingredients*: Citral Ex Lemongrass | Geraniol Ex Citronella 85% | Geraniol Ex Palmarosa 85% & 98% | Thymol crystals 95% | Parsley Seed Oil Terpeneless

*New Arrivals

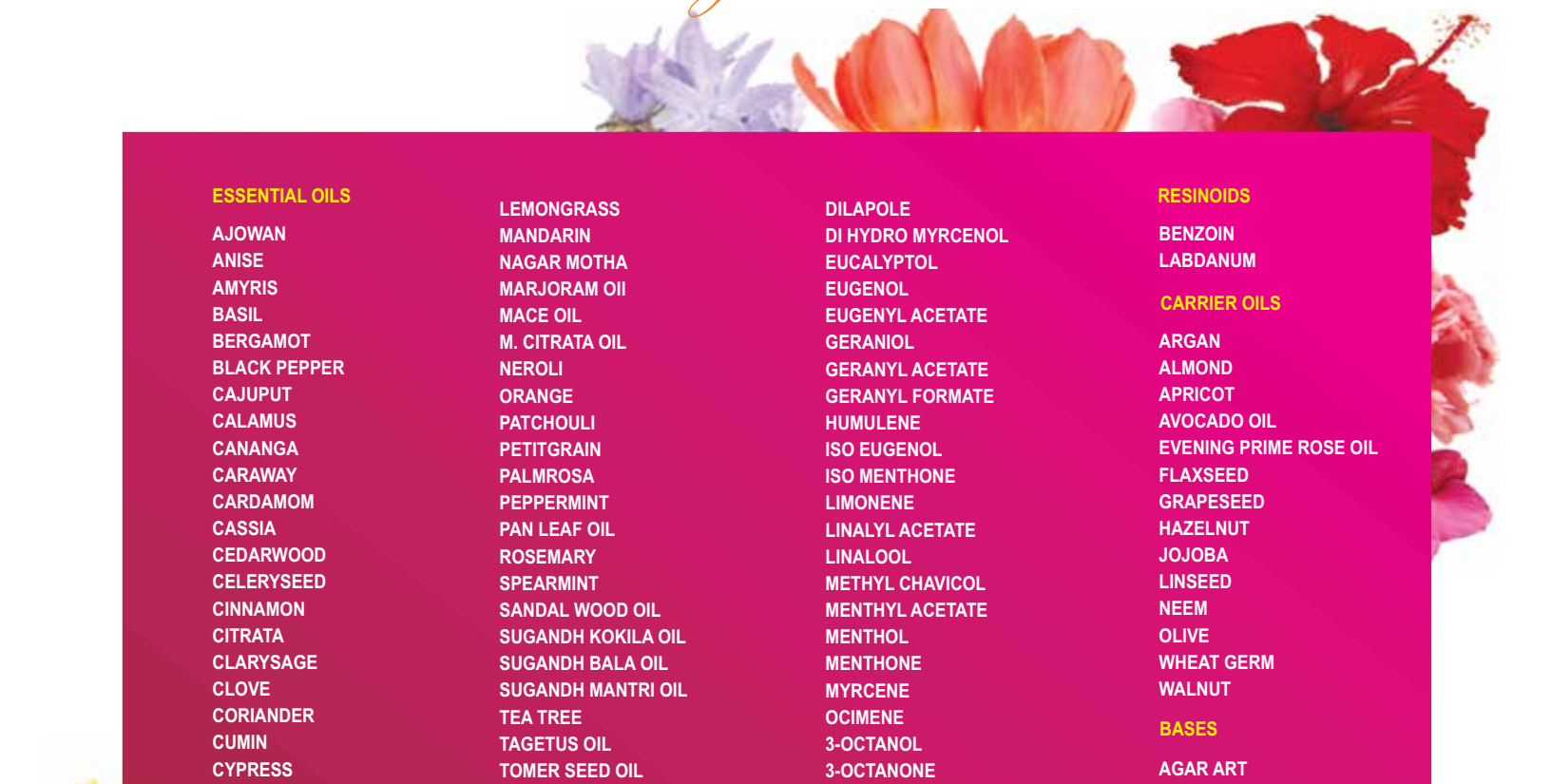
Plant Lipids Private Limited, Cochin, Kerala, India - 682 311.

plant lipids
good. by nature.

+91 484 284 4500
+91 776 089 7252
info@plantlipids.com
www.plantlipids.com

TODAY'S COMPETITIVE BUSINESS DEMAND PRECISE SOURCING OF RAW MATERIALS

You may trust us.



ESSENTIAL OILS

AJOWAN
ANISE
AMYRIS
BASIL
BERGAMOT
BLACK PEPPER
CAJUPUT
CALAMUS
CANANGA
CARAWAY
CARDAMOM
CASSIA
CEDARWOOD
CELERYSEED
CINNAMON
CITRATA
CLARYSAGE
CLOVE
CORIANDER
CUMIN
CYPRESS
CARROT SEED OIL
CIT-JAWA OIL
DILL SEED
EUCALYPTUS
FRANKINCENSE
FENNEL
GERANIUM
GINGER
GRAPEFRUIT
GUAICWOOD
GURJAN
JAMROSA
JUNIPERBERRY
KAPOOR KACHRI
LAVENDER
LAVANDIN
LEMON
LIME OIL
LEMONGRASS
MANDARIN
NAGAR MOTHA
MARJORAM OII
MACE OIL
M. CITRATA OIL
NEROLI
ORANGE
PATCHOULI
PETITGRAIN
PALMROSA
PEPPERMINT
PAN LEAF OIL
ROSEMARY
SPEARMINT
SANDAL WOOD OIL
SUGANDH KOKILA OIL
SUGANDH BALA OIL
SUGANDH MANTRI OIL
TEA TREE
TAGETUS OIL
TOMER SEED OIL
TURMERIC
YLANG YLANG
VETIVER OIL

AROMA CHEMICALS

ANETHOLE
ALPHA PINENE
ALPHA COPAENE
BERGAMOTENE
BETA PINENE
BISABOLENE
CARVONE
CARYOPHYLLENE
CIS-3-HEXENOL
CIS 3 HEXENYL ACETATE
CITRONELLOL
CITRONELLYL ACETATE
CITRONELLYL FORMATE
DILAPOLE
DI HYDRO MYRCENOL
EUCALYPTOL
EUGENOL
EUGENYL ACETATE
GERANIOL
GERANYL ACETATE
GERANYL FORMATE
HUMULENE
ISO EUGENOL
ISO MENTHONE
LIMONENE
LINALYL ACETATE
LINALOOL
METHYL CHAVICOL
MENTHYL ACETATE
MENTHOL
MENTHONE
MYRCENE
OCIMENE
3-OCTANOL
3-OCTANONE
3-OCTANYL ACETATE
3-OCTANYL FORMATE
PARA CYMENE
PHELLANDRENE
PINENES
PHENYL ETHYL ALCOHOL
PHENYL ETHYL ACETATE
PHENYL ETHYL METHYL ETHER
PHENYL ETHYL FORMATE
TERPINYL ACETATE
TERPINENE (GAMMA)
TERPINENE-4-OL
TERPINEOL
THYMOL

RESINOIDS

BENZOIN
LABDANUM

CARRIER OILS

ARGAN
ALMOND
APRICOT
AVOCADO OIL
EVENING PRIME ROSE OIL
FLAXSEED
GRAPESEED
HAZELNUT
JOJOBA
LINSEED
NEEM
OLIVE
WHEAT GERM
WALNUT

BASES

AGAR ART
AMBER
ANIMALIS
CIVET
HYACINTH
JASMINE
KEWRA
MUSK
OAKMOSS
ROSE
SANDAL ART
SHAMAMA

SIVA EXPORT CORPORATION

Som Santi House, 152, Patparganj Industrial Estate, Delhi - 110092, India
Phones: 91-11-22148207,22143195,22153077 Fax: 91-11-22143066 website: www.somextracts.com, Email: s.v@somextracts.com

SOM VARSHNEY GROUP *since 1973*

United Multichem

Aromatic Chemicals and Essential Oils

An essence of purity



Aroma Chemicals and Essential Oils

Alpha / Beta / Methyl Ionone	Linalyl Acetate	D-Limonene
CIS-3-Hexenol/Hexenyl/Salicylate	Ligustral	Dihydromyrcenol
Citronellyl Acetate	Lilial	Eucalyptol 99.5%
Citral	Methyl Ionone	Eucalyptus Oils
Citronellol	Nerol	Eugenol
Citronellal	Raspberry Ketone	Geranium Oil-E Brand
Ethyl Vanillin	Tetrahydrogeraniol (DMO)	Iso Eugenol
Gamma Methyl Ionone	Tetrahydrolinalool	Isoborneol
Geranyl Acetate	Tonalide	Myrcene
Hedione	Anethole	Orange Oil
Hydroxy Citronellal	Clove Leaf Oil Rectified 85%	Patchouli Oil 887
Linalool	Camphor	Paracymene
Sabinene 75%	Terpinene-4 OL - 98%	Vanillin

AN ISO & GMP CERTIFIED LEADING IMPORTER & DISTRIBUTOR

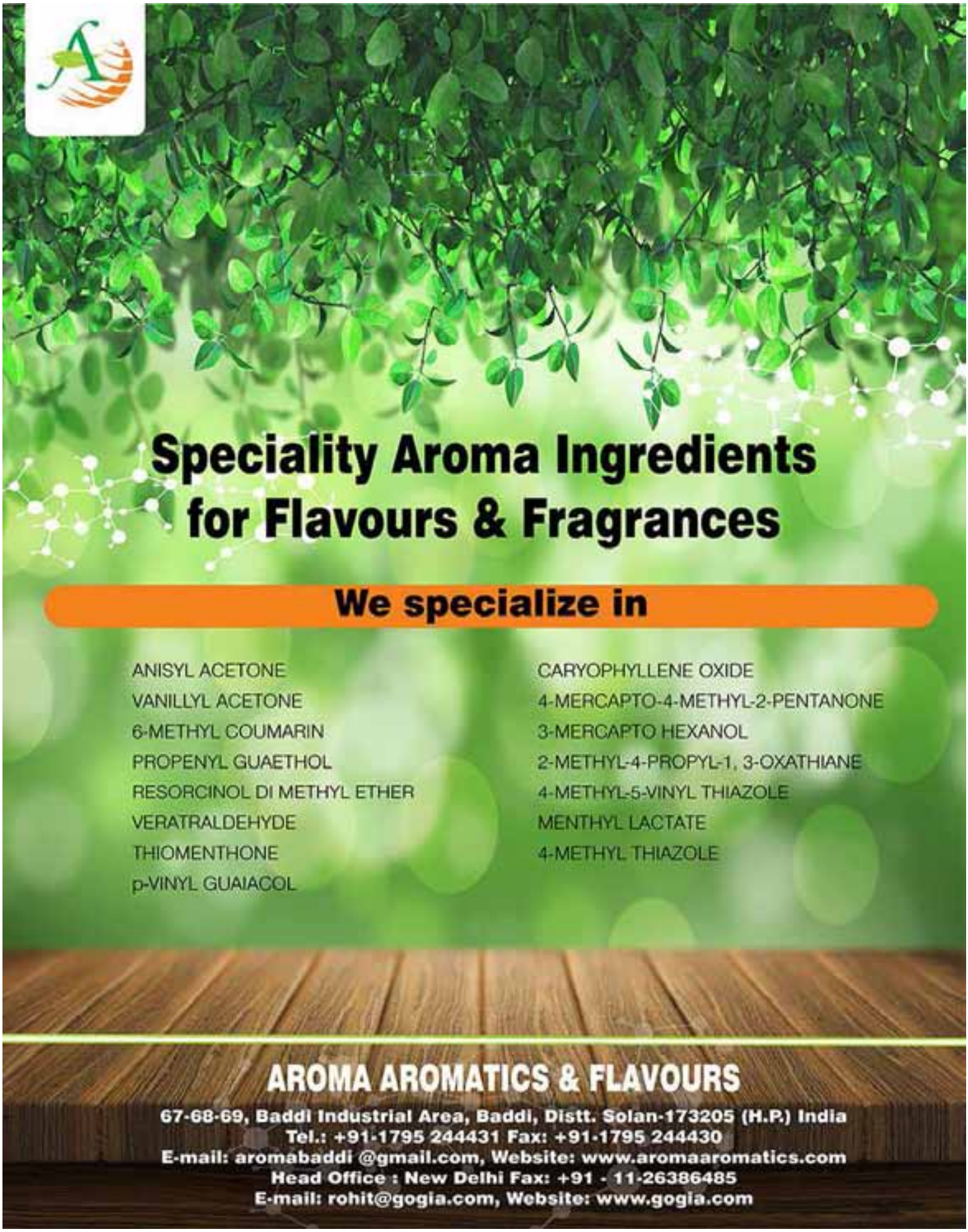
UNITED MULTICHEM LLP

C-117, Sector - 2, Noida (U.P.) - 201301 | +91-0120-4192736
www.unitedmultichem.com | sales@unitedmultichem.com

ISO GMP

Partners

NHU 新和成 | Indesso | CUTRALE | GREEN PINE | WANXIANG INTERNATIONAL


Speciality Aroma Ingredients
for Flavours & Fragrances
We specialize in
ANISYL ACETONE
VANILLYL ACETONE
6-METHYL COUMARIN
PROPENYL GUAETHOL
RESORCINOL DI METHYL ETHER
VERATRALDEHYDE
THIOMENTHONE
p-VINYL GUAIACOL
CARYOPHYLLENE OXIDE
4-MERCAPTO-4-METHYL-2-PENTANONE
3-MERCAPTO HEXANOL
2-METHYL-4-PROPYL-1, 3-OXATHIANE
4-METHYL-5-VINYL THIAZOLE
MENTHYL LACTATE
4-METHYL THIAZOLE
AROMA AROMATICS & FLAVOURS
67-68-69, Baddi Industrial Area, Baddi, Distt. Solan-173205 (H.P.) India
Tel.: +91-1795 244431 Fax: +91-1795 244430
E-mail: aromabaddi @gmail.com, Website: www.aromaaromatics.com
Head Office : New Delhi Fax: +91 - 11-26386485
E-mail: rohit@gogia.com, Website: www.gogia.com

R. D Corporation

DEALERS IN
NATURAL ESSENTIAL OILS
AROMATIC CHEMICAL AND
PERFUMERY COMPOUND

Authorized Dealer of Javerians Saffron

A Mark of 100% Purity

Our Product

Javerian Saffron
100 % Pure Grade 1 from the Farms of Srinagar

Javerians Saffron TEA CAP

Javerian Saffron Soap 100 % Pure

For More Information Please Contact

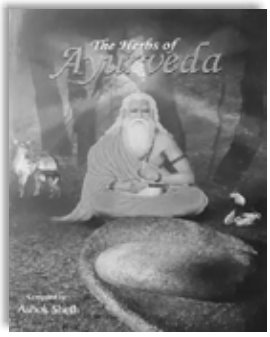
R. D. CORPORATION

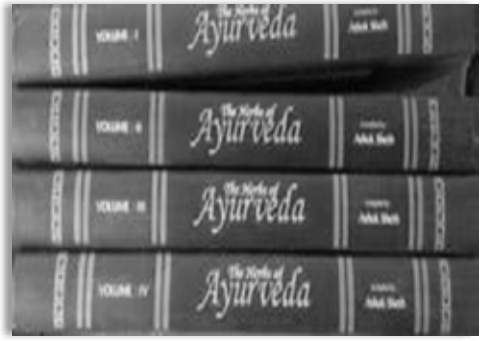
Flat No. 302 , Shivam Building, C - Wing, Satyam Shivam Sundaram Building,
Road No 28 B, Sion Circle, Mumbai, 400022, Maharashtra
Mobile : + 91 9820017808 | +91 7710883010
Office No. : 022 24072255
Email : rdcorporation1@gmail.com | Website : https://www.javeriansaffron.com

THE HERBS OF AYURVEDA - 4 Volumes Set (600 Herbs)

Collectors Edition Compiled By Ashok Seth (Partner, Sheth Brothers (Kayam Churna)

600 MAJOR HERBS IN AYURVEDA COVERED , FULLY ILLUSTRATED WITH COLORFUL PHOTOS ON GLOSSY JAPANESE PAPER





These Books has received a Foreward and an Appreciation from

Hon. Shri A.P.J. Abdul Kalam &
Hon. Shri Narendra Modi

The Herbs of Ayurveda is published in four Volumes , in which 600 Medicinal Herbs have been described with Fully Colourful Photographs. Each Volumes consists of 150 medicinal Herbs which are arranged alphabetically by Latin (Botanical) names. Books starts with Particulars on what is Ayurveda ? History of Ayurveda, History of Herbs and Pharmacognosy.

Each Volume is divided into three sections.

In Section I : High Quality Photographs of Plant Parts with mother tinctures, oils, gums, latex , etc., are given, while on the right hand side detailed description of same herb is given. ie., English name, Latin Name and its synonyms (if any), followed by different language names (sanskrit, Hindi, Gujarati, Tamil, Malayalam, Telugu and Kannad) for the same herb are given. Other details like Family, distribution, description of plant, chemical constituents , Parts used , medicinal Properties, usages, dose, formulation and special note in which peculiarity or controversy if any is discussed.

In Section II : Resources, includes addresses of educational institutes, research institutions, herberia and Medicinal Gardens, websites related to medicinal plants, parameters on some medicinal herbs about qualitative and quantitative data with guidelines for tests are given according to Indian herbal pharmacopeia , glossary of medicinal and botanical terms. References of books given at the end.

In Section III : Index, which includes index of Botanical names, index of English names, Index of Sanskrit names, Index of Hindi Names with page numbers. In the end contents of each of the 4 volumes are given

This Voluminous Book on medicinal herbs will be useful to ***students of Ayurveda, Botany, Homeopathy, Naturopathy, unani and pharmacy. It will be also useful to Drug Manufacturers, teachers, Lecturers, Physicians , researchers as well as common laymen***.

DATTANI BOOK AGENCY
Technical and Reference Literature Agency

follow us on twitter

Like us on Facebook

www.dattanibookagency.in

349-AA, Mangaldas Bldg. No.5, 1st Floor, Kitchen garden Lane, MUMBAI – 400 002, INDIA
Tel : 022 22035946 / 49746799 Mob. 9821506648 / 9892197223
Email : dattanibookagency@gmail.com Web Site : www.dattanibookagency.com

Distillerie Bleu Provence Sarl. (France)
Clary Sage Oil (100% Pure & Natural)
Lavandin Abrial (100% Pure & Natural)
Lavandin Grosso (100 % Pure & Natural)

Frutarom
Balsam Tolu Resinoid
Balsam Peru Resinoid

Dominus Oleum Ltd. (Bulgaria)
Chammomile Blue Pure
Chammomile Roman Pure
Lavender Absolute Bulgarian
Lavender Bulgarian Pure
Rose Absolute Bulgarian
Zdravetz Oil

O'Laughlin Industries Co. Ltd.
Adoxal
Cis Jasmone
Canthoxal (Floral Anise)
Allyl Cyclohexyl Glycolate (Cyclogalbanate)
Ethylene Brassylate
Florazone
Helional
Iso Cyclo Citral
Lambroxine
Linlan Alcohol (Majantol)
Marinal (Precyclemone-B)
Methyl Pamplemousse
Myrac Aldehyde
Ocimene PQ
Poivyrol (Mahagonate)
Trigustral (Triplal / Hivertal)
Vernaldehyde

Nippon Zeon
2 Cyclopenyl Clopentanone
Cepionate
Cis-3-Hexenol
Cis-3-Hexenyl Acetate
Cis-3-Hexenyl Salicylate
Methyl Di Hydro Jasmonate (Claigeon)

VIJAY GROUP

Destilerias Munoz Galvez S.A
Alpha Terpinene 90% - 200041
Bornyl Laevo Acetate Crystal
Cade Oil Crude - 300032
Cade Oil Rectified 100% Pure & Natural
Chamomile Oil Pure - 300084
Chamomile Oil Spanish - 300234
Cistus Resinoid -R - 19223
Cypress Oil 100% Pure & Natural - 300039
Gamma Terpinene - 19308
Labdanum Absolute (Ambreine)
Labdanum Gum 5/10% Moisture - 19289
Labdanum Resionid - G - 20841
Labdanum Resionid - Gb30
Laevo Borneol Pure
Lavender Oil Pure - 300070
Neroli Oil - 406144
Origanum Oil -N.I. 300432
Pennyroyal Oil Pure - 300114
Rosemary Oil Pure - 15763
Rue Oil
Sage Oil
Thyme Oil White 65/70
Thyme Oil White-N.I - 500561

Symrise (Germany)
Abetic Acid
Aldron
Amber Wood F
Ambrocinide
Brahmanol F
Buccoxime
Farnesol P
Florazone
Geranium Oil Bourbon
Geranyl Tiglate
Indoflor Crystal
Iso Bergomot
Iso Muscone 50 % D.E.P.
Lactoscatone
Macrolide Supra
Macrolide Supra
Mysore Acetate
Ozonil
Romaryl R
Rose Oxide L
Sultanane
Timberol
Ysamber K

Camlin
Vanillin
Evanil Ethyl Vanillin
DMHQ

BASF (Germany)
Beta Ionone
Citral Extra Pure
Citronellol 96%
Ethyl Linalool
Geraniol 60%
Geraniol Extra 98%
Geranyl Acetate
Hydroxy Citronellal
Linalool
Linalyl Acetate
Lysmeral
Methyl Ionone 70% (M I G)
Nerolidol
Nerol 93 %
Pyranol
Pyranyl Acetate
Tetra Hydro Geraniol
Tetra Hydro Linalool

Hangzhou Grascent Co., Ltd
Allyl Cyclo Hexyl Propionate
Alpha Cedrene Epoxide
Alpha Damascone
Cedrol Crystal
Cedryl Acetate (50 % Liquid)
Cedarwood Oil Technical
Delta Damascone
Di Hydro Coumarin
Di Methyl Heptanol
Di Hydro Beta Ionone
Lantral (Ligustral)
Megasantol (Polysantol)
Methyl Cedryl Ether
Methyl Cedryl Ketone
Methyl Cedryl Ketone (Coeur)
Muscosandrol (Ebanol)
Sandacanol (Bacdanol)
Sandasweet (Sandalore)

Aquila Organics Pvt Ltd

Aldehyde C-16 (4 Peak)
Padma
Phenyl Ethyl Acetate
Phenyl Ethyl Alcohol
Phenyl Ethyl Alcohol Extra (China Type)
Phenyl Ethyl Methyl Ether
Strawberry Aldehyde (2 Peak)

Les Domaines Agricoles, Morocco

Cistus Oil ((100% Pure & Natural)

Rivera Balsam, El Salvador

Peru Balsam Pure

Nanjing Cosmos Chemicals Co. Ltd.

Lily Aldehyde Plus (Lilyal)

Essential Oils	Origin
Amyris Oil	Haitti
Armoise Oil	Morocco
Armoise Oil	France
Bergomot Oil Finest	Italy
Cedarwood Oil Atlas	USA
Cedarwood Oil Texas	USA
Cedarwood Oil Viriginia	USA
Clary Sage Oil	Russian
Clove Leaf Oil Rectified 86.5%	Indonesia
Corriander Seed Oil	Russian
Elemi Oil	France
Eucalyptus 60%	China
Eucalyptus 80%	China
Guaicwood Oil	Paraguay
Galbanum Oil	Iran
Geranium Oil	Egypt
Geranium Oil	China
Gurjun Balsam Oil Dark/Light	Indonesia
Lemon Finest	Italy
Mandarin Oil Red / Green	Italy
Oakmoss Absolute	France
Orange Oil	Brazil
Patchouli Oil Iron Free	Indonesia
Patchouli Oil Pure	Indonesia
Petit Grain Oil	Paraguay
Rosemary Oil	Tunisia
Styrax Oil	Honde Ness
Vetivert Oil	Haitti
Ylang Ylang Pure I	Biolandes

www.viijaygroup.com

Kalpsutra Chemicals / Tide Industries / Sodium Metal

Iso Camphyl Cyclo Hexanol (ICCH)
Isobornyl Cyclohexanol (IBCH)
Methyl Naphthyl Ketone Beta (Equivalent To Oranger Liquid)
Alpha Amyl Cinnamic Aldehyde
Alcohol C-11 Undecyclic
Aldehyde C-10
Aldehyde C-11 Undecyclenic
Aldehyde C-11 Undecyclic
Aldehyde C-12 Lauric
Aldehyde C-12 Mna
Aldehyde C-9
Gamma Decalactone
Gamma Nonalactone (C-18)
Gamma Undecalactone (C-14)
Lilly Alcohol (Similar To Muguet Alcohol)
Novafolene
Rose Oxide (70:30) & (90:10)
Verdyl Acetate
Verdyl Propionate
Verdyl Isobutyrate

Green Pine Industries

Terpineol Pg Grade
Terpineol Ep Grade
Alpha Pinene
Beta Pinene
Pine Oil Grade 20/22/30/40/50/60/70
Terpinolene 20
Terpineol Acetate

Chinese Products

Acetoin
Acetophenone
Allyl Amyl Glycolate (A.A.G)
Alpha Pinene
Amber Xn (Ambrocinide)
Ambergris Ketone (Iso E Super)
Anethole
Benzophenone 99.7%
Butylated Hydroxy Toluene (BHT)
Cedarwood Oil
Cedrol Crystal
Cedryl Acetate Crystal
Celestolide
Cinnamic Acid
Cis -3- Hexenol
Cis -3- Hexenyl Acetate
Cis -3- Hexenyl Salicylate
Delta Do Decalactone
D.M.B.C
D.M.B.C.A
D.M.B.C.B.
Ethyl 2 Methyl Butyrate
Ethyl Cinnamate
Ethyl Maltol Fcc
Ethyl Vanillin
Eucalyptol
Evernyl
Fenchyl Alcohol
Foralyn (Herculine D)
Furanone
Galaxolide Neat
Galaxolide 50 % D.E.P
Helional
Herculyn-D (Hydrgenated Resein Acid Methyl Esters)
Iso Cyclo Citral
L Carvone
Ligustral
Linalool Oxide
Lyral
Maltol
Maple Lactone
Methyl Cinnamate
Hedione (Methyl Di Hydro Jasmonate)
Methyl Salicylate
Musk Ambrette
Musk Ketone (0.1% & 0.8%)
Musk Xylol
Muskolide (Tonolide)
Nopyl Acetate
Para Cresol
Phenoxynol
Raspberry Ketone
Sulfurol Milky
Terpenyl Acetate
Terpinene 4-ol
Tri Ethyl Citrate
Vanillin
Calone

Green Leaf Extractions Pvt Ltd

Ajowan Oil
Anise Seed Oil
Asafoiteda Oil
Basil Oil
Bay Leaf Oil
Bergamot Oil
Black Pepper Oil
Cajeput Oil
Calamus Oil
Cardamom Oil
Carrot Seed Oil
Cedar Wood Oil
Cellery Seed Oil
Cinnamon Leaf Oil
Citrodora Oil
Citronella Oil
Clary Sage Oil
Coriander Oil
Cumin Oil
Davana Oil
Dill Seed Oil
Fennel Oil
Garlic Oil
Ginger Grass Oil
Ginger Oil
Grape Fruit Oil
Holy Basil Oil
Lavander Oil
Lemongrass Oil
Nagarmotha Oil
Nutmeg Oil
Olibanum Oil
Onion Oil
Palmarosa Oil
Parsley Seed Oil
Rosemary Oil
Tagates Oil
Tea Tree Oil

Moraya Global

Allyl Amyl Glycolate
Indole
Skatole
Styrallyl Acetate

Privi Speciality Chemicals Pvt. Ltd.

Alpha Damascone
Alpha Ionone
Amber Fluer
Amber Gamma
Bita Ionone Perfumery Grade
Citral Extra Pure
Citronellal
Citronellol 95%
Citronellol Acetate
Citronellol Extra
Citronellyl Nitrile
Di Hydro Mercenol
Geraniol
Geranyl Acetate
Gamma Methyl Ionone
Indian Sandal Core
Ionone 100 %
Iso Borneol Acetate
Methyl Ionone
Nerol 95 %
Nerol Acetate
Nimberol
O.T.B.C.H.A
P.T.B.C.H.A
Sandal Fluer
Terpineol Acetate
Terpineol Perfumery Grade
Tetrahydro Geraniol (DMO)
Tetrahydro Geraniol Acetate
Tetrahydromyrcenol
Timber Touch
Timber Forte

Mac Industry

P.T.B.C.H Powder
O.T.B.C.H
O.T.B.C.H.A
P.T.B.C.H.A
Hydroxy Citronellol

Super Chemicals

Cinnamic Alcohol
Yara Yara

www.viijaygroup.com

ARPAN AROMATICS

WANXIANG INTERNATIONAL F & F P. LTD CHINA

- AMBERGRIS KETONE (ISO E SUPER)
- ANETHOLE 99%
- BENZYL SALICYLATE
- METHYL DIHYDRO JASMONATE (HEDIONE)
- L CARVONE 99%

MILTITZ AROMATICS GMBH, GERMANY

- METHYL PAMPLEMOUSSE
- HYDROXYAMBRAN

AROMA AROMATICS & FLAVOURS, BADDI, INDIA

- 2-METHOXY-4-VINYLPHENOL
- 3-MERCAPTOHEXANOL
- 4-METHYL-5-VINYLTHIAZOLE
- 6-METHYLCOUMARIN
- ANISYL ACETONE
- CAT KETONE
- CARYOPHYLLENE OXIDE
- MENTHYL LACTATE
- PROPENYL GUAETHOL
- RESORCINOL DIMETHYL ETHER
- THIOMENTHONE
- TROPATHIANE
- VERATRALDEHYDE
- ZINGERONE

OTHER SPECIALITY PRODUCTS

- 2 METHYL BUTYRIC ACID
- 4 VINYLGUAIACOL
- ACETAL E (VEROTYL)
- ALCOHOL C - 10
- ALCOHOL C - 8
- cis 6 NONENAL
- cis 6 NONENOL
- cis 6 NONENYL ACETATE
- CITRONELLOL
- DIHYDRO ISO JASMONE
- GERANIOL 60 / 98
- iso BUTYRIC ACID
- iso VALERIC ACID
- METHYL AMYL KETONE
- n BUTYRIC ACID
- n HEXANOL
- NOOT KETONE CRYSTALS
- PROPIONIC ACID
- ROSE OXIDE 70:30 (INACTIVE)
- ROSE OXIDE 90:10 (HIGH CIS)
- SCLAREOL
- STRAWBERRYIFF
- SULFURYL ACETATE
- TETRA HYDRO GERANIOL (DMO)
- TRANS-2-HEXENAL
- TRANS-2-HEXENOL
- VALENCENE

CONTACT

14, Maskati Market, Kalupur, Ahmedabad – 380002.
Tel. : +91 79 2217 3788 Telefax : +91 79 2216 5160.
web : www.arpanaromatics.com
e-mail : arpanaromatics@yahoo.co.in / info@arpanaromatics.com

O' LAUGHLIN

CIS JASMONE	OCIMENE PQ
ETHYL SAFRANATE	PRECYCLEMONE B
LINLAN ALCOHOL (MAJANTOL)	TRIGUSTRAL (TRIPLAL)
METHYL PAMPLEMOUSSE	POIVROL (MAHAGONATE)

ACS INTERNATIONAL GMBH GERMANY

4 VINYL GUAIACOL	GAMMA HEPTALACTONE
2 PENTYL CYCLO PENTANONE (DELPHONE)	GAMMA HEXALACTONE
DELTA DECALACTONE	GAMMA NONALACTONE
DELTA DODECALACTONE	GAMMA OCTALACTONE
DELTA HEXALACTONE	GAMMA UNDECALACTONE (C-14)
DELTA NONALACTONE	GAMMA VALEROLACTONE
DELTA OCTALACTONE	METHOXY PHENAL (CANTHOXAL)
DELTA UNDECALACTONE	JASMORANGE
DELTA TETRADECALACTONE	MDJ HC 30 (CEPIONATE) MDJ HC 70 (KHARISMAL)
GAMMA DECALACTONE	ROMOXYDE (CEDROXYDE)
GAMMA DODECALACTONE	L CARVEOL

AGAN AROMAS & FINE CHEMICALS LTD, ISRAEL

AMBRETOLIDE	DELTA DAMASCONE
ATRALONE (EVERNYL)	GREEN LEAF (TRANS 3 HEXENOL)
AGANILE (PEONILE)	

CONTACT

14, Maskati Market, Kalupur, Ahmedabad – 380002.
Tel. : +91 79 2217 3788 Telefax : +91 79 2216 5160.
web : www.arpanaromatics.com
e-mail : arpanaromatics@yahoo.co.in / info@arpanaromatics.com

Oriental Aromatics

Astromeran
Astromusk 50 % DEP / IPM/ BB/ DPG
Astromusk Concentrate
Camphor Powder
Capinone
Iso Bornyl Powder
Isoborneol Acetate
Ketone 101
Limofine
Neroline Bromilia
Phenyl Ethyl Acetate
Safranol
Terpineol
Terpinyl Acetate

Mehk Chemicals Pvt. Ltd

2-Isobutyl Quinoline
6 Methyl Quinoline (Para Methyl Quinoline)
6 Seceondary Butyl Quinoline (Pyralone)
6-8 Secondary Butyl Quinoline
Ambrether (Kephalis)
Amyl Vinyl Carbinol (Matsutake Alcohol)
Amyl Vinyl Carbinol Acetate (Matsutake Ace.)
D M B C
D M P E C (Muguet Carbinol)
Diphenyl Methane
Fructone (Apple Ketal , Applitone)
Green Acetal (Heptaldehyde Ethylene Glycol Acetel)
Methyl Benzoate
Methyl Phenyl Acetate
Neo Greenal (Heptanal Propylene Glycol Ace
Neo Jasminoid (Fleuramone , Projasmone
Oodinol (Arabinol , Cedanol)
Penta Sandal (Iso Mohanol)
Phenyl Ethyl Iso Amyl Ether (Pommerol ,Antl
Sweet Sandal
Verdyl Acetate (Dcpd Acetate , Cyclacet)
Vetacetate (Veticol Acetate)
Veticone (Vetikon)

Kedia Organics Chemicals Pvt Ld

6-Iso Propyl Quinoline
Acetal C.D
Acetyl-2 Pyrazine
Ethyl Phenyl Acetate
Maltyl Butyrate
Maltyl Iso Butyrate
Methyl Phenyl Acetate
Para Cresyl Acetate
Saffronile
Vanillin Iso Butyrate

Anshul Specialities Molecules Pvt Ltd

Di Methyl Anthranilate
Methyl Anthranilate

HANGZHOU GRASCENT CO., LTD

Allyl Cyclo Hexyl Propionate
Alpha Cedrene Epoxide
Alpha Damascone
Cedrol Crystal
Cedryl Acetate (50% Liquid)
Delta Damascone
Di Hydro Coumarine
Di Methyl Heptanol
Lantral (ligustral)
Megasantol (Polysantol)
Methyl Cedryl Ether
Methyl Cedryl Ketone
Methyl Cedryl Ketone (Coeur)
Muscosandrol (Ebanol)
Sandacanol (Bacdanol)
Sandasweet (Sandalore)

SUPER CHEMICALS

Cinnamic Alcohol
Yara Yara

AQUILA ORGANICS PVT LDT

Aldehyde C-16
Phenyl Ethyl Acetate
Phenyl Ethyl Alcohol
Phenyl Ethyl Alcohol Extra (China Type)
Phenyl Ethyl Methyl Ether
Padma

LES DOMAINES AGRICOLES, MOROCCO

Cistus Oil ((100% Pure & Natural)

RIVERA BALSAM, EL SALVADOR

Peru Balsam Pure

NANJING COSMOS CHEMICAL CO. LTD.

Lily Aldehyde Plus (Lilyal)

ESSENTIAL OILS	ORIGIN
Armoise Oil	France
Armoise Oil	Morocco
Amyris Oil	Haiti
Bergomot Oil Finest	Italy
Buchu Leaf Oil	
Cedarwood Oil Atlas	USA
Cedarwood Oil Texas	USA
Cedarwood Oil Viriginia	USA
Chammomile Oil Roman	Morroco
Clary Sage Oil	Russian
Clove Leaf Oil Rectified 86.5%	Indonesia
Corriander Seed Oil	Russian
Elemi Oil	France
Eucalyptus 60%	China
Eucalyptus 80%	China
Gauiacwood Oil	Paraguay
Galbanum Oil	Iran
Geranium Oil	Egypt
Geranium Oil	China
Gurjun Balsam Oil Dark / Light	
Lavender Absolute	
Lavender Oil	
Lemon Finest	Italy
Mandarin Oil Red / Green	
Oakmoss Absolute	
Orange Oil	Brazil
Patchouli Oil Iron Free	
Patchouli Oil Pure	Indonesia
Petit Grain Oil	Paraguay
Rosemary Oil	Tunisia
Sage Oil	
Styrax Oil	
Vetivert Oil	Haitti
Ylang Ylang Pure I	Biolandes

Advertiser's Index

S No	Advertisers	Page No.	TEL NO.	E-MAIL ID
1	ANTHEA AROMATIC PVT. LTD.	40	022-39145000	info@anthea-aromatics.com
2	AROMA AROMATICS & FLAVOURS	114	01795-244431	rohit@gogia.com
3	AQUILA ORGANICS PVT LTD	79	022-62483700	girish@acquilaorganics.com
4	AQUILA ORGANICS PVT LTD	80	022-62483700	girish@acquilaorganics.com
5	AQUILA ORGANICS PVT. LTD.	81	022-62483700	girish@acquilaorganics.com
6	ARPAN AROMATICS	36	079-22173788	arpanaromatics@yahoo.co.in
7	ARPAN AROMATICS	37	079-22173788	arpanaromatics@yahoo.co.in
8	ARPAN AROMATICS	124	079-22173788	arpanaromatics@yahoo.co.in
9	ARPAN AROMATICS	125	079-22173788	arpanaromatics@yahoo.co.in
10	ARPAN AROMATICS	126	079-22173788	arpanaromatics@yahoo.co.in
11	ARPAN AROMATICS	127	079-22173788	arpanaromatics@yahoo.co.in
12	ASSOCIATE ALLIED CHEMICALS	COVER IIA	022-24198810	aacipl@aacipl.com
13	ATTARI SALES CORPORATION	120	022-2341 0110	humatari@vsnl.com
14	BALAJI TRADING COMPANY	78	022-23432526	thakker_group@outlook.com
15	BBK SPECIALITIES	134	91-7738899993	kamalkesar100@gmail.com
16	BONTOUX NATURALS PVT. LTD.	12	022-28892104	bontoux.india@bontoux.com
17	BMV FRAGRANCES PVT. LTD.	28	91-8800397839	bmv@bmvfragrances.com
18	CHEMKART	73	91-8779024737	shaileshpaj@gmail.com
19	D. G. GORE	116	022-22080909	dgore@dggore.com
20	DATTANI BOOK AGENCY	117	022-22035946	dattanibookagency@gmail.com
21	DIP SOFTWARE SOLUTIONS	35	91-9830034635	hsbindra@dipssindia.com
22	DR. BHAVE & ASSOCIATES	121	91-9833942118	mnbhawe@hotmail.com
23	DSS AROMAS	131	022-22055599	dssaromas@yahoo.com
24	EMBEE CORPORATION	106	022-23432526	thakker_group@outlook.com
25	FINE FRAGRANCES PVT LTD	51	022-22076075	mail@fafai.org
26	FINE FRAGRANCE PVT. LTD.	52	022-22023834	sales@finefrag.com
27	FINE FRAGRANCE PVT. LTD.	53	022-22023834	sales@finefrag.com
28	FINE FRAGRANCE PVT. LTD.	54	022-22023834	sales@finefrag.com
29	FINE FRAGRANCE PVT. LTD.	55	022-22023834	sales@finefrag.com
30	FINE FRAGRANCE PVT. LTD.	56	022-22023834	sales@finefrag.com
31	FINE FRAGRANCE PVT. LTD.	57	022-22023834	sales@finefrag.com
32	FLAVOUR & ESSENCE RESOURCE	122	022-28778305	fivessence@rediffmail.com
33	GEM AROMATICS PVT. LTD	14	022-25185231	yparekh@gemaromatics.in
34	GEM AROMATICS PVT. LTD.	15	022-25185231	yparekh@gemaromatics.in
35	GIRISH ENTERPRISES	38	022-22013385	info@girishenterprise.in
36	GIRISH ENTERPRISES	39	022-22013385	info@girishenterprise.in
37	GIVAUDAN (I) PVT. LTD.	75	022-66625749	mamta.panchal@givaudan.com
38	HARISH C. KHOSLA & CO. PVT. LTD.	130	011-23214803	sales@hckindia.com
39	HEMANI AROMATICS	94	022-27782698	info@hemaniaromatics.com
40	HIMALAYA TERPENES PVT. LTD.	8	022-24056704	info@himalayaterpene.com
41	INDENTA CHEMICALS (I) P. LTD.	6	022-26849600	indenta@indenta.com
42	INDENTA CHEMICALS (I) P. LTD.	7	022-26849600	indenta@indenta.com

S No	Advertisers	Page No.	TEL NO.	E-MAIL ID
43	INDO GSP CHEMICALS	5	91-22-61585000	admin@indogsp.com
44	KAMAL AROCHEM	50	022-26845485	kamalarochem@hotmail.com
45	KARNATAKA AROMAS	21	080-43468800	aromas@karnatakaaromas.com
46	KARNATAKA AROMAS	22	080-43468800	aromas@karnatakaaromas.com
47	KARNATAKA AROMAS	23	080-43468800	aromas@karnatakaaromas.com
48	LEO CHEMO PLAST PVT. LTD.	16	022-40279000	hitesh@leochemo.com
49	MUSKS AND FRAGRANCE	13	022-68151800	indentor@muskfrag.com
50	MUSKS AND FRAGRANCE	24	022-68151800	indentor@muskfrag.com
51	MUSKS AND FRAGRANCE	74	022-68151800	indentor@muskfrag.com
52	MUSKS AND FRAGRANCE	98	022-68151800	indentor@muskfrag.com
53	NIRMITI LABS PVT. LTD.	120	022-24050960	nirmitilab@gmail.com
54	NISHANT AROMAS	76	022-28806611	info@nishantaromas.com
55	NISHANT AROMAS	77	022-28806611	info@nishantaromas.com
56	NOREX FLAVOURS PVT. LTD.	17	0592 4273095	sales@norex.in
57	ORGANICA AROMATICS PVT. LTD.	68	080-27735252	info@organicaaroma.com
58	PHARM AROMATIC CHEMICALS	103	022-23432526	thakker_group@yahoo.com
59	PLANT LIPIDS PVT. LTD.	111	0484-2844500	info@plantlipids.com
60	PUSHPA FLAVOURS & FRAGRANCES P LTD.	107	91-8380081933	pushpaflav@gmail.com
61	PUSHPA FLAVOURS & FRAGRANCES P LTD.	108	91-8380081933	pushpaflav@gmail.com
62	PUSHPA FLAVOURS & FRAGRANCES P LTD.	109	91-8380081933	pushpaflav@gmail.com
63	PUSHPA FLAVOURS & FRAGRANCES P LTD.	110	91-8380081933	pushpaflav@gmail.com
64	R D CORPORATION	115	91-9820017808	rdcorporation1@gmail.com
65	RAKESH PRODUCTS	58	0512-2563930	info@rakeshin.com
66	RAKESH SANDAL INDUSTRIES	COVER IV	0512-2563930	info@rakeshsandal.com
67	S & S AROMA ASSOCIATES	82	91-9820571273	ameyaprabhu87@gmail.com
68	S. H. KELKAR & COMPANY LTD	18	022-21677777	www.keva.co.in
69	S. H. KELKAR & COMPANY LTD.	19	022-21677777	www.keva.co.in
70	SACHEEROME PVT. LTD.	9	011-47311111	info@sacheerom.com
71	SATYAM ENTERPRISES	10	022-23432526	thakkar_group@outlook.com
72	SEVANTILAL & SONS	COVER III	022-22061218	sevantilalsons@vsnl.net
73	SHRADDHA ANALYTICAL SERVICES	116	91-9821291797	saslab21@gmail.com
74	SIVA EXPORT CORPORATION	112	011-22148207	s.v@somextracts.com
75	SONAROME PVT. LTD.	2	91-9916663126	sonarome@sonarome.com
76	SONAROME PVT. LTD	11	91-9916663126	sonarome@sonarome.com
77	SONAROME PVT. LTD.	20	91-9916663126	sonarome@sonarome.com
78	SOOFI ENTERPRISES	95	022-22043044	sales@soofi.in
79	SOOFI TRADERS	96	022-22043044	sales@soofi.in
80	SOOFI TRADERS	97	022-22043044	sales@soofi.in
81	TREATT INDIA	41/42	91-9986667710	nikhil.subramanian@treatt.com
82	TRIO FLAVOURS & FRAGRANCES	67	91-9082635400	trioperfumes@yahoo.com
83	ULTRA INTERNATIONAL LTD.	COVER II	011-41517010	ultra@ultraintl.com
84	UNITED MULTICHEM PVT. LTD.	113	0120-4192736	sales@unitedmultichem.com
85	VIJAY GROUP	4	022-24132120	vtco@viijaygroup.com
86	VIJAY GROUP	118	022-24132120	vtco@viijaygroup.com
87	VIJAY GROUP	119	022-24132120	vtco@viijaygroup.com
88	VIJAY GROUP	123	022-24132120	vtco@viijaygroup.com
89	VIJAY GROUP	128	022-24132120	vtco@viijaygroup.com
90	VIJAY GROUP	129	022-24132120	vtco@viijaygroup.com

B B K
SPECIALITIES

Manufacturers of

SAFRANAL 100%

BBK House, Plot No. C-341, TTC, Industrial Area,
Nr. Dhirubhai Ambani Knowledge City, MIDC- Pawne,
Navi Mumbai - 400 705.

Ph.: 07738899993, 09323143129, 09820066631
Email: kamalkesar100@gmail.com
Website: www.bbkspecialities.com

SEVANTILAL & SONS

Products offered:

Alphaline 70
Beta Ionone
Dehydro- linalool
Dihydro – linalool
Ethyllinalool
Ethyllinalyl Acetate
Geranyl Acetone
Isophytol
Isonaline 70
Linalool
Linalyl Acetate
Methyl – heptenone
Nerolidol
Tetrahydro Linalool
Tetrahydrolinalyl Acetate






Aroma Ingredients from:

DSM
BRIGHT SCIENCE. BRIGHTER LIVING.

Authorised Importer - Distributor

SEVANTILAL & SONS
905, Marathon Icon, Marathon Nextgen Complex,
Ganpatrao Kadam Marg , Lower Parel (West),
Mumbai – 400013. Tel – 24977100/7101, 66342925/2926
Fax – 00-91-22-24977103 Email – info@sevantilalandsons.com

REGD. NO. 70958/99

Natural Essential Oils
Aromatherapy Oils & Carrier Oils

Serving The World Since 1972

U.S. FDA, WHO-GMP, ISO 9001, HACCP
KOSHER, HALAL, FSSAI & ORGANIC CERTIFIED

Natural

- Essential Oils
- Carrier Oils
- Herbal Extracts
- Perfumery Compounds
- Aromatherapy Oils
- Oleoresins etc.

RAKESH
SANDAL INDUSTRIES

STAR EXPORT HOUSE RECOGNIZED BY GOVT. OF INDIA

OFFICE : 25, Azad Nagar, Kanpur, (U.P.) India.
PHONE : +91-512-2563930-36
MOB : +91-738-8233330/31/34/39
E-Mail : info@rakeshin.com
Web : www.rakeshin.com

Our Groups: Rakesh Products · Organikos Valley · Aroma Vaidyasala

Our Membership: एपीडा APEDA · EEPC INDIA · FICCI · pharmexcil · FIEO

Printed at : Onlooker Press ☎ 2218 3544 / 2218 2939