

**Firmenich**  
for good, naturally

**FIRMENICH  
PERFUMERY  
INGREDIENTS  
2020**



**ECOINGREDIENT COMPASS**

**INNOVATIVE CRAFTSMANSHIP IN FRAGRANCES, TASTE AND BEYOND**

FAMILY OWNED, FOUNDED IN GENEVA, 1895



# MOLECULES

## ALDEHYDIC

		907163	ALDEHYDE C 11 UNDECYLIC	
		906954	ALDEHYDE C 9	
		965765	ALDEHYDE MANDARINE 10 TEC	
		907771	ALDEHYDE MNA	
		907768	ALDEHYDE MOA	
			908162	ALDEHYDE SUPRA

## AMBERY

		908930	AMBRINOL	
		909120	AMBROX® DL	
			909158	AMBROX® SUPER
		922560	CETALOX®	

## AROMATIC

		962608	MYROXYDE®
		974482	PLICATONE
		979035	ROMASCONE

## FLORAL

		920100	CARBINOL MUGUET	
		922493	CENTIFOLETHER	
		928130	CORANOL	
			937001	CYCLOMETHYLENE CITRONELLOL
		937160	CYCLOPIDENE	
		937250	CYCLOSIA®	
		937449	DAMAROSE ALPHA	
		937450	DAMASCENONE	
		937459	DAMASCENONE TOTAL	
		937470	DAMASCONE ALPHA	
		939697	DAMASCONE BETA FAB	
		937856	DAMASCONE DELTA	
		944580	DAMASCONE GAMMA	
		937165	DELPHOL HC®	
		937850	DELPHONE	
		939668	DOREMOX®	
		942551	FIRASCONE®	
		966458	FLOROL®	
		964898	HEDIONE®	
		947325	HEDIONE® HC	
		948605	HIVERNAL® NEO	
		949828	IRALIA®	
		949970	IRALIA® TOTAL	
		950324	IRONE ALPHA <a href="#">New</a>	
		952700	JASMINLACTONE <a href="#">New</a>	
		965414	JASMOLACTONE DELTA	
		955210	LILYFLOR®	
		956256	LORYSIA®	
		957230	MAYOL®	
		936915	METHYL CYCLOGERANATE	
		945040	METHYL GERANATE	
			972375	PHENYLETHYL ALCOHOL NAT <a href="#">New</a>
		973080	PHENYLHEXANOL	
		981050	SALICYNILE® <a href="#">New</a>	
		981816	SCLAREOLATE®	
		990257	VELOUTONE®	

## ANIMALIC

		949021	INDOCOLORE™
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## FRUITY

		943871	FRUCTALATE®
		951517	ISOPENTYRATE
		969380	OXANE 50 TEC

## GOURMAND

		943881	FURANEOL® <a href="#">New</a>
		943910	FURANEOL® NAT <a href="#">New</a>

## GREEN

		925001	CIS-3-HEXENOL NAT <a href="#">New</a>
		925002	CIS-3-HEXENYL ACETATE NAT <a href="#">New</a>
		925004	CIS-3-HEXENYL CAPROATE NAT <a href="#">New</a>
		939745	DYNASCONE®
		944252	GALBANOLENE 10 TEC
		966466	NEOBUTENONE® ALPHA
		978891	RHUBOFLOR
		989007	TRIFERNAL®
		991805	VIOLETTYNE 10 MIP

## MUSKY

			926851	CIVETTONE
			942008	EXALTENONE
			941962	EXALTOLIDE®
			935985	EXALTOLIDE® TOTAL
			947303	HABANOLIDE®
			947650	HELVETOLIDE®
			962191	MUSCENONE® DELTA
			962195	MUSCONE
			954117	MUSCONE LAEVO
			979031	ROMANDOLIDE®

## SPICY

			938520	DIHYDRO EUGENOL
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## WATERY

		918970	CALONE®
		920000	CASCALONE® <a href="#">New</a>
		981810	SCENTENAL®

## WOODY

		922470	CEDROXYDE®	
		970953	CLEARWOOD®	
		937490	DARTANOL®	
		942596	FIRSANTOL®	
		967412	NORLIMBANOL®	
		967406	NORLIMBANOL® DEXTRO	
		963479	PHYSEOL	
		974656	POLYSANTOL®	
		978880	RHUBOFIX®	
			992964	Z11 10 MIP

# BASES

## AMBERY

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908685	AMBRANUM
184120	AMBREGRIS SYNTH
000505 E	FIXATEUR
947173	GRISAMBROL D

## ANIMALIC

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184004 D	CASTOREUM SYNTH
184014 D	CIVETTE SYNTH

## AROMATIC

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199618 D	SARRIETTE BASE
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## BALSAMIC

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184235	BENZOIN SIAM RES SUBST DIPG
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## CITRUS

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184056	BERGAMOTE
184040 D	CITROASIS BASE
184067 F	CITRON
270258	KUMQUAT BASE
184002 KD	MANDARINAL
041310 G	TAMARINE BASE
184116 D	VERT DE CITRON

## FLORAL

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<b>New</b>	184255	BEYOND HIVERNAL®
<b>New</b>	184256	BEYOND LILYFLORE®
	921189	CASSIONE
	184134 D	CETYLIA® BASE
	184026 FG	DAMASCENIA
	184057 D	DORINIA
<b>New</b>	184231	FIRLIAL
	000199 SA	IRIS ABS SYNTH
	184032 D	IRIS CONCRETE SYNTH
	184000	JACINTHEME
	184065 D	JASMIN
	184165 D	JASMIN
	184195	JASMOPHORE
<b>New</b>	184226	LILY BASE
	184011	PARMANTHEME
	000193 GB	ROSESSENCE
	184022	ROSESSENCE
	184010 F	ROSESSENCE
	184036	WARDIA®
	184212 D	WARDIA® BM

## FRUITY

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184049 K	CASSIS BASE
184075 D	FRAISE
184039 D	FRAMBOISE
184078 D	FRUIT SEC
184059 D	GRANNY SMITH BASE
184062 D	GRAPEFRUIT BASE
270237	GUAVA BASE
002000 F	MIRABELLE
109223 GEB	PASSION FRUIT BASE
975617	PRUNELLA®

## GOURMAND

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184139 D	NECTAROL
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## GREEN

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038350 B	ALLOGAL BASE
184005 D	FEUILLAGE VERT
184061 D	GALBEX®
290958	IVY BASE
38231	OXANIA BASE

## MUSKY

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911383	AURANONE
911382	AURATOUCH

## LOUD

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	293316	LEATHER OUD
<b>New</b>	283528	LOUD ANOKHA
<b>New</b>	283526	LOUD MALEKI
<b>New</b>	283527	LOUD SAMRAT
	184007 D	LOUD SYNTH
	820526	PRETTY OUD

## WOODY

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	260107 D	ARMENIAN WOOD BASE
	296985	BLACK AGAR
<b>New</b>	184270	DREAMWOOD™ BASE
	066606 D	FIXOBOIS
	109289 H	LIMBWOOD
	260108 B	MYSORE WOOD BASE
	017979 F	PALISANDROL
	184025 D	SANDALWOOD
<b>New</b>	184268	SANDALWOOD OIL TYPE NAT
	184173 B	TEAK
	991002	VETYRSIA®
	260106	WOOD BASE

# NATURALS

## AMBERY

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925094	CISTUS ABS
925115	CISTUS OIL
953418	LABDANUM ABS
953424	LABDANUM EXT TEC
953642	LABDANUM RES
962741	MYRRH ABS
962728	MYRRH EO
962731	MYRRH OIL
962735	MYRRH SFE
967844	OLIBANUM EO
967866	OLIBANUM EO RECT
967875	OLIBANUM RES
967880	OLIBANUM RES 80 TEC
939926	OLIBANUM SFE
968239	OPOPONAX ABS
968188	OPOPONAX EO
983551	STYRAX EO
220576	STYRAX OIL TYPE
983834	STYRAX RES
983835	STYRAX RES NEUTRALIZED
925084	CISTUS ABS TYPE NAT
BASE	AMBRANUM 908685

## ANIMALIC

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942629	CASTOREUM FIRBEST
948820	HYRACEUM ABS DIPG

## BALSAMIC

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915058	BENZOIN SIAM RES
915085	BENZOIN SIAM RES 40 DIPG
915063	BENZOIN SIAM SFE
915034	BENZOIN SUMATRA RES
915090	BENZOIN SUMATRA RES 50 DIPG
943208	HAY PAYS ABS
954888	LIATRIX ABS DECOL
971717	PERU BALSAM EO
971716	PERU BALSAM RES
988054	TOLU BALSAM RES TYPE
220951	TOLU RES TYPE NAT
BASE	BENZOIN SIAM RES SUBST DIPG 184235

## AROMATIC

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922549	CELERY SEED SFE
919030	CHAMOMILE BLUE EO
919099	CHAMOMILE ROMAN EO
919080	CHAMOMILE WILD EO
981593	CLARY SAGE ABS
981532	CLARY SAGE PAYS CRUSHED EO
928143	CORIANDER SEED EO
941302	EVERLASTING ABS
942402	FENUGREEK INDIA ABS
942403	FENUGREEK RES
954256	LAVANDIN ABS DECOL
954355	LAVANDIN GROSSO EO
220487	LAVENDER ABS TYPE NAT
954144	LAVENDER PAYS ABS
956953	MARJORAM EO
957218	MATE ABS CTX
957163	MATE ABS DECOL CTX
960073	MINT OIL PIPERITA US TYPE SX
960067	MINT PIPERITA EO BOULDER SX
983169	MINT PIPERITA EO CASCADE SX
957582	MINT SPICATA ABS
978969	ROSEMARY SFE
940119	TARRAGON EO
 987717	TEA BLACK SFE
 987725	TEA GREEN SFE ORG
 987721	TEA WHITE CHINA SFE
954241	LAVANDIN ABS
220593	LAVANDIN ABS GREEN TYPE
220514	LAVANDIN CTE GREEN TYPE

## EARTHY - MOSSY

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942627	OAKMOSS FIRBEST 50 MIP
942636	OAKMOSS RES FIRBEST
942626	TREEMOSS FIRBEST 50 TEC
942638	TREEMOSS RES FIRBEST

# NATURALS

## CITRUS

<u>New</u>	946979	GRAPEFRUIT OIL 5X
<u>New</u>	985950	GRAPEFRUIT TERPENES
<u>New</u>	926528	GREEN MANDARINE CITRONOVA® FAB
<u>New</u>	986156	GREEN MANDARINE TERPENES
<u>New</u>	926520	LEMON CITRONOVA® 16X FAB
<u>New</u>	925615	LEMON OIL 10X
<u>New</u>	925661	LEMON OIL 4X
<u>New</u>	985462	LEMON TERPENES
<u>New</u>	987333	LEMON TETRAROME® FAB
<u>New</u>	926469	LIME TAHITI CITRONOVA® FAB
<u>New</u>	986056	LIME TERPENES
<u>New</u>	968402	ORANGE CARBONYLES
<u>New</u>	926477	ORANGE CITRONOVA® 5X FAB
<u>New</u>	926437	ORANGE CITRONOVA® 60X FAB
<u>New</u>	926444	ORANGE CITRONOVA® 20X FAB
<u>New</u>	968457	ORANGE ESS 10X
<u>New</u>	968392	ORANGE OIL 10X
<u>New</u>	974771	ORANGE OIL DECOL
<u>New</u>	986243	ORANGE TERPENES CITRONOVA® FAB
<u>New</u>	987442	ORANGE TETRAROME® FAB
<u>New</u>	968374	ORANGE VALENCIA OIL 5X
<u>New</u>	968442	ORANGE VALENCIA OIL DECOL
<u>New</u>	926524	TANGERINE CITRONOVA® FAB
<u>New</u>	984692	TANGERINE CRAVO OIL 4X

## GREEN

	920941	CASSIE ABS
	920945	CASSIE ABS TYPE NAT
	944375	GALBANUM EO RECT
	944451	GALBANUM PURIF EXT
	944453	GALBANUM RES
	944459	GALBANUM SFE
	960019	MIMOSA ABS
	960012	MIMOSA MOROCCO ABS
	960024	MIMOSA PAYS ABS
	972085	PETITGRAIN OIL
	972064	PETITGRAIN PARAGUAY EO
	991725	VIOLET LEAVE EGYPT ABS
	991521	VIOLET LEAVE PAYS ABS

## FLORAL

	944945	BROOM ABS
	984310	ELDERFLOWER ABS
	220533	GERANIUM ABS TYPE
	945686	GERANIUM EGYPT EO
	952147	JASMINE ABS
	952145	JASMINE AUTUMN ABS
	952155	JASMINE EGYPT ABS
	952657	JASMINE EGYPT SFE
	952605	JASMINE SAMBAC ABS
	952154	JASMINE SAMBAC CHINA ABS
	942609	JASMINE SAMBAC FIRABS
	966689	NEROLI BIGARADE EO
	966805	NEROLI MOROCCO EO
	942780	ORANGE FLOWER MOROCCO ABS
	942790	ORANGE FLOWER TUNISIA ABS
	950335	ORRIS ABS 75 IRONE
	950121	ORRIS CTE NAT 15 IRONE
	950128	ORRIS CTE NAT 8 IRONE
	220489	ORRIS CTE TYPE 15 IRONE
	950179	ORRIS CTE TYPE 8 IRONE
	950123	ORRIS EXT
	950124	ORRIS RES ABS
	220454	ORRIS RES ABS TYPE
	950290	ORRISCIENCE 15 IRONE
	950342	ORRISCIENCE 75 IRONE
	950289	ORRISCIENCE 8 IRONE
	979489	ROSE BULGARIA EO
	942621	ROSE CENTIFOLIA FIRABS
	979686	ROSE CENTIFOLIA PAYS ABS
	979692	ROSE EO
	979195	ROSE MOROCCO ABS
	979352	ROSE TURKISH ABS
<u>New</u>	987004	TEA JASMINE SFE
	992470	YLANG EO
	220933	YLANG OIL TYPE
	220561	JASMINE ABS TYPE
	220658	ROSE ABS MOROCCO TYPE
	220622	ROSE DAMASCENA ABS TYPE
	220605 MF	ROSE OIL TYPE

## FRUITY

921271	BLACKCURRANT BUD BURGUNDY ABS
917865	BUCHU EO AGED
941806	EVODIA EO
969340	OSMANTHUS ABS
984596	TAGETE MADAGASCAR EO

## GOURMAND

925005	BEESWAX ABS
220412	BEESWAX ABS TYPE NAT
924605	BEESWAX HONEYCOMB ABS
982450	BRAN WHEAT SOFT ABS
918805	COCOA DECOL PG
<b>New</b> 918748	COFFEE COLUMBIA SFE
<b>New</b> 918743	COFFEE ESPRESSO SFE
918868	COFFEE SANTOS SFE
918857	COFFEE SFE
942539	HONEY PROVENCE FIRABS
971653	PERIPLOCA EO 10 TEC
982089	SESAME SFE ABS
988195	TONKA BEAN ABS
988198	TONKA BEAN RES
<b>New</b> 990044	VANILLA BOURBON SFE ABS
990045	VANILLA PLANIFOLIA ABS
990098	VANILLA PLANIFOLIA SFE
990070	VANILLA PLANIFOLIA SFE ABS
989947	VANILLA TAHITENSIS SFE
990068	VANILLA TAHITENSIS SFE ABS
990103	VANILLIN EX BEANS 95
927198	WINE LEES EO

## LEATHERY

936358	LEATHER MD
939912	OLIBANUM RES VULCAIN
973817	PINE NEEDLE ABS VULCAIN
983586	STYRAX RES VULCAIN

## LOUD

969406	LOUD ASSAFI™
942575	LOUD FIRBEST
<b>New</b> BASE	LOUD ANOKHA 283528
<b>New</b> BASE	LOUD MALEKI 283526
<b>New</b> BASE	LOUD SAMRAT 283527

## MUSKY

908840	AMBRETTE ABS
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## SPICY

920375	CARDAMOM ABS
920370	CARDAMOM GREEN POD SFE
920372	CARDAMOM GUATEMALA EO
919413	CINNAMON BARK SFE
946618	CLOVE BUD SFE
939853	ELEMI EO
939866	ELEMI RES
939865	ELEMI SFE
946422	GINGER CLEAR SFE
946417	GINGER SFE
962178	NUTMEG EO RECT
962118	NUTMEG EO SLC
220572	NUTMEG OIL TYPE
974644	PEPPER BLACK ABS PG
974611	PEPPER SICHUAN SFE
974635	PEPPER WHITE SFE
974642	PEPPER WHITE SFE CLEAR
911583	PINK PEPPER BRAZIL SFE
974606	PINK PEPPER EO
911579	PINK PEPPER WW SFE
911558	STAR ANISE SFE

## WOODY

921588	CEDAR LEAF EO
967442	CEDARWOOD ALASKA EO
922044	CEDARWOOD VIRGINIA EO
922051	CEDARWOOD VIRGINIA OIL RECT
937415	CYPRIOL EO HEART
220440	FIR ABS TYPE NAT
970929	PATCHOULI HEART SFE
973814	PINE NEEDLE ABS
989909	VALERIAN EO
991154	VETIVER HAITI EO
220716	VETIVER OIL TYPE
991252	VETIVER SFE
<b>New</b> BASE	SANDALWOOD OIL TYPE NAT 184268

### **SFE: Supercritical Fluid Extraction**

Supercritical CO<sub>2</sub> Extraction is a technology in which carbon dioxide, put beyond its critical point (73 bars and 30°C), becomes a supercritical fluid with special properties.

The extraction carried out at a low temperature preserves the natural profile identity of the raw material.

It is among the most advanced and sustainable extraction technologies and is also safe for the workers and the environment.

### **MD: Molecular Distillation**

Distillation at low temperature under vacuum, for specific fractionation.

Used to obtain colorless products, as well as very precise fractions of any kind of extract.

### **EO: Essential Oil**

Obtained by distillation of the biomass with water or steam.

The essential oil is physically separated from the aqueous phase by decantation.

### **CTE: Concrete**

Obtained by primary volatile solvent extraction on fresh biomass (flowers).

### **RES: Resinoid**

Obtained by primary volatile solvent extraction on dry biomass (gums, spices).

### **ABS: Absolute**

Obtained through alcoholic purification of a primary solvent extraction (concrete or resinoid).

### **FIRABS / FIRBEST: Co-Extraction**

Result of a harmonious synergy between our perfumers, our natural specialists and our scientists, these ingredients comes from a co- extraction of natural and synthetic ingredients of which some are captives.

For FIRABS the natural part is a blend of natural ingredients containing the named ingredient co-extracted with a synthetic ingredient part. This part can be a base or just a single molecule.

FIRBEST are developed on the same way BUT they do not contain the mentioned ingredient. They are reconstitution-like ingredients, a technical response to an artistic demand.

### **VULCAIN: Pyrogenation**

A controlled and monitored creation of pyrogenized molecules during a specific heating process.

### **COLD EXPRESSION**

Expression is the name given to all the techniques for producing an essential oil by squeezing citrus peel (zest).

From the whole fruit, zests are scratched by various mechanical techniques. The liquid is then filtered and the oil is obtained from decantation.

### **TETRAROME®**

Citrus oils concentrated via extraction using proprietary solvent systems.

### **CITRONOVA®**

Highly concentrated citrus oils manufactured via distillation and/or fractionation.

Type: Blend of materials.

# ECOINGREDIENT COMPASS



## BIODEGRADABILITY

Ingredients that are biodegradable

**Readily ( $\geq 60\%$  within 28 days AND from 10 to 60% within 10 days).**

**Ultimately ( $\geq 60\%$  within 60 days),  
Partially (20 to 60% within 60 days).**

Green Chemistry principle 10

Biodegradation is assessed in lab tests following OECD guidelines.

Diluted ingredient: value of the pure ingredient.



Readily biodegradable



Ultimately biodegradable



Partially biodegradable



## GREEN CHEMISTRY SCORE

A ratio that covers most of the remaining Green Chemistry Principles in addition to Renewable carbon and Biodegradability.

Regroups the measure of:

**Carbon atom economy,**

Green Chemistry principles 2 & 8

**Importance of catalysis steps,**

Green Chemistry principle 9

**Hazardousness, covering all aspects of manufacturing processes.**

Green Chemistry principles 3, 4, 5 & 12

Developed by Firmenich.

Diluted ingredient: value of the pure ingredient.



> 70% Green Chemistry



50-70% Green Chemistry



## RENEWABLE CARBON

Ingredients that contain

**more than 50% carbon from renewable sources.**

Green Chemistry principle 7

ISO 16128

Diluted ingredient: value of the dilution.



100% RC



> 50% RC



## WHITE BIOTECHNOLOGY

Ingredients that are produced

- from white biotechnology (no green chemistry score  $\boxtimes$ )

- or via white biotechnology (green chemistry score associated  $\boxdot$ )