



PRICE LIST

1 January 2020

FLAVORS - SINGLE PURCHASE

No. of capsules	Additional fees (net)	Price per capsule (net)
1 - 9	shipment (~2.5 €)	15 €
10 - 39	shipment (~2.5 €)	14 €
40 - 59	shipment (~3.5 €)	13 €
60 ≤	shipment (~3.5 €)	12 €

SENSORY TRAINING

The price for sensory trainings is set independently

TRAINING WITH FLAVOR PACKAGE

No. of capsules	Additional fees	Price (net)
10 (training) + 40 (any)	transportation	600 € for the capsules + price for a training which is set independently
+1	each additional capsule	12 €

PROMOTIONS AND DISCOUNTS

For all orders paid before January 10th

-10%

Regular calibration: for each subsequent order, above 10 aromas, once a quarter **1 capsule free**

Instruction video: https://www.youtube.com/watch?v=dixMG6Ji_30

One capsule, after dissolving in 1l of beer, releases aroma with a 3x threshold concentration. When dissolved in a different volume of fluid, the concentration changes analogously. Can be used with water, neutral beers (low esters and higher alcohols), craft beers. Sometimes, in combination with other aromas (sulfuric, dark beers), the aroma may vary. Intensity of the aromas is also significantly affected by temperature.

The training duration is around 4 hours. Dates of training can be set individually.

I plan to send first orders around January 20. The time of subsequent deliveries will depend on the availability of specific flavors. Payment based on invoice or bill. Complete set of information about ordered aromas is attached to each order.

If you have any questions or concerns, please contact me.

SUGGESTED FLAVOR SETS

SUGGESTED FLAVOR SET FOR CRAFT BREWERIES (10)

No.	Name	Description
1	Acetaldehyde, green apple	Unfinished fermentation
2	Acetaldehyde, paint	Beer oxidation
3	Diacetyl	Bad fermentation, infection
4	Sulphitic, SO ₂	Yeast strain
5	Hydrogen sulphide, H ₂ S	Autolysis, infection, unfinished fermentation
6	Papery, T2N	Beer aging
7	Oxidised	Oxidation
8	Honey	Oxidation
9	Phenolic	Infection, yeast strains
10	Isovaleric acid	Oxidized hops or beer

Additional interesting aromas: Isoamyl alcohol (too high fermentation temperature), DMS (boiled corn, ketchup - contamination or malt of higher quality), DMDS (malt, Maillard reactions), Phenolic (spicy), Caramel (malt), Catty (hops), Isovaleric acid (old hops), Sour (lemon), Methional (baked potatoes, pasteurization), Malt (melanoidic), Astringent (tannins).

Acid beers - citric, lactic, acetic acid (fermentation, acids, fruit, infection).

Aged and draft beers - brett, vanilla, leather, caprylic (candle crayons), almonds.

SUGGESTED FLAVOR SET FOR BARTENDERS / BEERGEEEKS (5)

No.	Name	Description
1	Acetaldehyde (green apple)	Unfinished fermentation
2	Diacetyl	Bad fermentation, infection
3	Ethyl hexanoate	Yeast
4	Isoamyl acetate	Yeast
5	Malty, biscuity	Malt

Additional interesting aromas: Isoamyl alcohol (too high fermentation temperature), Hops, DMS (boiled corn, ketchup - contamination or malt of higher quality), Yeasty, Smoky, Phenolic (spicy), Caramel (malt), Catty (hops), Isovaleric acid (old hops), Sour (lemon), Almond (barrel, stones), Honey (oxidation), Lactic (sour beer, infection), Sulfuric H₂S (fermentation). Sulfur SO₂ (fermentative), Light struck (green bottle), Oxidized.

SUGGESTED FLAVOR SET FOR CERTIFIED CICERONE EXAM (6)

No.	Name	Description
1	Acetaldehyde (green apple)	Unfinished fermentation
2	Acetic	Fermentation
3	Diacetyl	Bad fermentation, infection
4	DMS, Dimethyl sulphide	Not too intense boil of the wort, bad malt quality, infection
5	Light struck	Effect of ultraviolet light on iso-alpha-acids
6	Papery, T2N	Beer aging

SUGGESTED FLAVOR SET FOR BJCP EXAM (22) - bjcp.org/faults.php

No.	Name	Description
1	Acetaldehyde (green apple)	Unfinished fermentation
2	Isoamyl alcohol	To high fermentation temperature
3	DMS, Dimethyl sulphide	Not too intense boil of the wort, bad malt quality, in-

		fection
4	Diacetyl	Bad fermentation, infection
5	Phenolic	Infection, yeast strains
6	Hydrogen sulphide, H ₂ S	Autolysis, infection, unfinished fermentation
7	Ethyl hexanoate	Yeast
8	Plastic	Styren infection
9	Yeasty	Autolysis, presence of yeast in beer, too young beer
10	Freshly cut grass	Hops (mainly fresh), malt, beer aging
11	Lactic acid	Infection or addition of lactic acid bacteria
12	Metallic	Metal ions in beer
13	Chlorophenol	Contact of wort / beer with chlorine
14	Musty	TCA (trichloroacetic acid) infection
15	Light struck	Effect of ultraviolet light on iso-alpha-acids
16	Papery, T2N	Beer ageing
17	Smoky	Bacteria or yeast infection, addition of smoked raw materials
18	Astringent	Hops, pH too low during lautering
19	Sulphitic, SO ₂	Yeast strain
20	Oxidised	Oxidation
21	Cooked vegetable	Fermentation, bacterial infection
22	Acetic	Fermentation

SUGGESTED FLAVOR SET FOR BEER JUDGES (20)

No.	Name	Description
1	Acetaldehyde (green apple)	Unfinished fermentation
2	Acetaldehyde (paint)	Oxidised beer
3	DMS, Dimethyl sulphide	Not too intense boil of the wort, bad malt quality, infection
4	Diacetyl	Bad fermentation, infection
5	Phenolic	Infection, yeast strains
6	Hydrogen sulphide, H ₂ S	Autolysis, infection, unfinished fermentation
7	Ethyl hexanoate	Yeast
8	Catty	Hops or beer oxidation
9	Isovaleric acid	Oxidized hops or beer
10	Caprylic	Pasteurisation, microfiltration, fermentation, refermentation or bad aging conditions
11	Lactic acid	Infection or addition of lactic acid bacteria
12	Metallic	Metal ions in beer
13	Methional	Pasteurization
14	Honey	Oxidation
15	Light struck	Effect of ultraviolet light on iso-alpha-acids
16	Papery, T2N	Beer aging
17	Spicy, eugenol	Infection or wild yeast
18	Astringent	Hops, pH too low during lautering
19	Sulphitic, SO ₂	Yeast strain
20	Oxidised	Oxidation






Additional important flavors: Isoamyl acetate, Malty (biscuity), Isoamyl alcohol, Rotting vegetables / DMDS. Boiled Vegetables, Smoky, Guaiacol, Oniony, Geraniol. Yeast, Hop oil, Mushroom, Mercaptan, Caramel.







Other interesting, but not so frequent aromas: butyric acid, Grainy (cereal), Freshly cut grass, Plastic, Nail polish remover, Musty.







Acid beers - citric, lactic, acetic acid (fermentation, acids, fruits, infection).




Aged and draft beers - brett, vanilla, leather, caprylic (candle crayons), almonds.








ALL AVAILABLE AROMAS





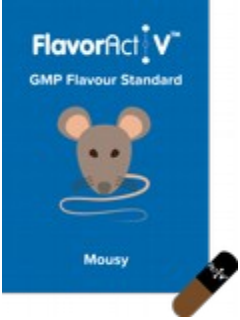

No.		Name	Description
1		Acetaldehyde (green apple)	Unfinished fermentation
2		Acetaldehyde (paint)	Oxidised beer
3		Alkaline	Badly provided cleaning (CIP)
4		Isoamyl alcohol	To high fermentation temperature
5		Barnyard	Wild yeast infection







6	 <p>FlavorActiV[™] GMP Flavour Standard Bromophenol</p>	Bromophenol	Infection of raw materials
7	 <p>FlavorActiV[™] GMP Flavour Standard Cooked Onion</p>	Cooked Onion	Oxidation, too weak wort boil
8	 <p>FlavorActiV[™] GMP Flavour Standard Chlorophenol</p>	Chlorophenol	Contact of wort / beer with chlorine
9	 <p>FlavorActiV[™] GMP Flavour Standard Kettle Hop</p>	Kettle hops	Hops in a kettle
10	 <p>FlavorActiV[™] GMP Flavour Standard DMS</p>	DMS, Dimethyl sulphide	Not too intense boil of the wort, bad malt quality, infection
11	 <p>FlavorActiV[™] GMP Flavour Standard Yeasty</p>	Yeasty	Autolysis, presence of yeast in beer, too young beer







12	 <p>FlavorActiV™ GMP Flavour Standard Diacetyl</p>	Diacetyl	Bad fermentation, infection
13	 <p>FlavorActiV™ GMP Flavour Standard Phenolic</p>	Phenolic	Infection, yeast strains
14	 <p>FlavorActiV™ GMP Flavour Standard Geraniol</p>	Geraniol	Infection, relevant yeast strains
15	 <p>FlavorActiV™ GMP Flavour Standard Rotten Vegetables</p>	Rotten vegetable	Same as DMS
16	 <p>FlavorActiV™ GMP Flavour Standard Bitter</p>	Bitter	Hops or hops products
17	 <p>FlavorActiV™ GMP Flavour Standard Cooked Vegetable</p>	Cooked vegetable	Fermentation, bacterial infection






18		Hydrogen sulphide, H ₂ S	Autolysis, infection, unfinished fermentation
19		Ethyl hexanoate	Yeast
20		Indole	Bacterial infection
21		Caramel	Malt, long boil
22		Catty	Hops or beer oxidation
23		Musty	TCA (trichloroacetic acid) infection

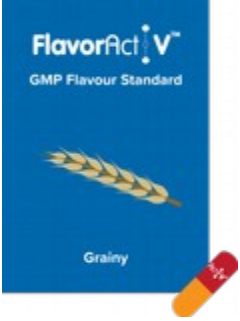


24	 <p>FlavorAct V[™] GMP Flavour Standard Isovaleric</p>	Isovaleric acid	Oxidized hops or beer
25	 <p>FlavorAct V[™] GMP Flavour Standard Caprylic</p>	Caprylic	Pasteurisation, micro-filtration, fermentation, refermentation or bad aging conditions
26	 <p>FlavorAct V[™] GMP Flavour Standard Butyric</p>	Butyric acid	Infection of raw materials added to beer
27	 <p>FlavorAct V[™] GMP Flavour Standard Lactic</p>	Lactic acid	Infection or addition of lactic acid bacteria
28	 <p>FlavorAct V[™] GMP Flavour Standard Sour</p>	Sour	Bacterial infection, fruit supplements, yeast of bad quality, too long mash
29	 <p>FlavorAct V[™] GMP Flavour Standard Ethyl Butyrate</p>	Ethyl butyrate	Hops or esterified butyric acid
30	 <p>FlavorAct V[™] GMP Flavour Standard Mercaptan (ethanethiol)</p>	Mercaptan	Hops, bacterial infec-

			tion
31		Metallic	Metal ions in beer
32		Methional	Pasteurization
33		Almond	Oxidation
34		Honey	Oxidation
35		Mousy	Brett infection
36		Motor fuel	Infection with petroleum materials

37		Light struck	Effect of ultraviolet light on iso-alpha-acids
38		Isoamyl acetate	Yeast
39		Acetic	Fermentation, infection
40		Hop oil	Hop
41		Papery, T2N	Beer aging
42		Mushroom	Fungus infection

43	 <p>FlavorActiV[™] GMP Flavour Standard</p> <p>Plastic</p>	Plastic	Styren infection
44	 <p>FlavorActiV[™] GMP Flavour Standard</p> <p>Spicy</p>	Spicy, eugenol	Infection or wild yeast
45	 <p>FlavorActiV[™] GMP Flavour Standard</p> <p>Astringent</p>	Astringent	Hops, pH too low during lautering
46	 <p>FlavorActiV[™] GMP Flavour Standard</p> <p>Sulphitic</p>	Sulphitic, SO ₂	Yeast strain
47	 <p>FlavorActiV[™] GMP Flavour Standard</p> <p>Leathery</p>	Leathery	aging beer, Brettanomyces yeast
48	 <p>FlavorActiV[™] GMP Flavour Standard</p> <p>Sweet</p>	Sweet	Sugars

49		Malty, biscuity	Malt
50		Salty	Malt, additives, bad cleaning
51		Freshly cut grass	Hops (mainly fresh), malt, beer aging
52		Oxidised	Oxidation
53		Vanilla	Barley, beer aging
54		Smoky	Bacteria or yeast infection, addition of smoked raw materials

55		Grainy	Bad quality of malt or bad mashing
56		Earthy	Infection of beer or raw materials for its production
57		Acetic	Fermentation