



# Organoleptic Characteristics of Flavor Materials

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- Judith Michalski
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- Robert Pan, Principal Development Scientist, Spicetec Flavors & Seasonings

## Methyl *cis*-5-octenoate (synonym: guavanate)

Source: Bedoukian

FEMA# 4165, CAS# 41654-15-3

Natural occurrence: Mango, pineapple and salak (snake fruit).

Odor: @ 100%. Waxy, green, fruity, fatty and slightly tallowlike.

Taste: @ 2 ppm. Green, waxy, fruity, melonlike and unripe fruity notes.

Taste: @ 4 ppm. Green, waxy, unripe fruitlike, melon/cucumberlike and green vegetablelike.

Possible applications: The synonym for this chemical indicates it is a good material for guava, which it is, with its green fruity quality. It will also modify the fresh notes of pear, apple, honeydew, watermelon, mango, strawberry, cucumber, green pepper and green vegetables.

►Bedoukian; [www.bedoukian.com](http://www.bedoukian.com)

## Clementine oil, five-fold

Source: Lionel Hitchen

GRAS, CAS# 8008-31-9, *Citrus clementina*, natural

Odor: @ 100%. Sweet, juicy, orange/mandarin, peely and slightly waxy.

Taste: @ 5 ppm. Fresh, juicy, slightly peely, citrus and orange/mandarin.

Taste: @ 10 ppm. Sweet, juicy, tangerine/orange, fresh and slightly peely.

Possible applications: This highly characteristic essential oil will be welcome in all orange and mandarin flavors as well as citrus blends, fruit punch, mango, apricot and BBQ sauce.

►Lionel Hitchen; [www.lhn.co.uk](http://www.lhn.co.uk)

## Geranium oil, terpeneless

Source: Lionel Hitchen

GRAS, CAS# 68916-44-9, *Pelargonium graveolens*, natural

Odor: @ 100%. Earthy, oily, green, floral and rosy with a hint of citrus.

Taste: @ 2 ppm. Fresh, green, leafy, rosy, fruity and floral.

Taste: @ 4 ppm. Fresh, green, waxy, floral, rosy and fruity.

Possible applications: The fresh, rosy notes of this material will enhance the floral complex of flavors such as apple, pear, raspberry, peach, apricot, blueberry, lychee and tomato. Other flavors to consider are tea, hibiscus, red wine and honey.

►Lionel Hitchen; [www.lhn.co.uk](http://www.lhn.co.uk)

## Green ginger oil

Source: Lionel Hitchen

FEMA# 2522, CAS# 8008-08-7, *Zingiber officinale* Rosc., natural

Odor: @ 100%. Sharp, fresh, woody, spicy, ginger and warm with citrus/lemon notes.

Taste: @ 2 ppm. Fresh, green, waxy, ginger and slightly citral-like with a slight bite.

Taste: @ 4 ppm. Fresh, green, waxy, spicy, citruslike and ginger with a bite.

Possible applications: Flavors needing a fresh ginger profile will benefit from this essential oil, especially ginger beer, ginger ale and Asian as well as sweet spice blends. It also will add a spicy twist in lemon, lime, mint and honey flavors.

►Lionel Hitchen; [www.lhn.co.uk](http://www.lhn.co.uk)

## 3,6-Nonadien-1-ol (synonym: orrisol)

Source: Bedoukian

FEMA# 3884, CAS# 76649-25-7

Natural occurrence: Melon and prickly pear.

Odor: @ 100%. Oily, fatty, sweet, green, melonlike, fresh and ripe.

Taste: @ 5 ppm. Sweet, green, waxy, cucumberlike, melonlike and slightly floral.

Taste: @ 10 ppm. Waxy, green, melonlike and slightly floral.

Possible applications: The flavor of most melon flavors will be enlarged by the use of this ingredient, especially honeydew, watermelon and their cousin, cucumber. Other flavors where its green profile will be appreciated are apple, pear, dragonfruit, kiwi and even green pepper.

►Bedoukian; [www.bedoukian.com](http://www.bedoukian.com)

## Oakwood absolute

Source: Biolandes

GRAS, CAS# 71011-28-4, *Quercus robur* L., natural

Odor: @ 100%. Woody and brown with a hint of whiskey.

Taste: @ 2 ppm. Woody, brown, whiskeylike and casky with a maple nuance.

Taste: @ 4 ppm. Woody, whiskeylike, casky and slightly maple-like with a dry mouthfeel.

Possible applications: This very characteristic material will add a rich depth to vanilla, whiskey, wood-aged wines including Chardonnay and cabernet sauvignon, maple, nuts, tea and BBQ flavors.

► **Biolandes**; [www.biolandes.com](http://www.biolandes.com)

## Lovage root oil

Source: Biolandes

FEMA# 2651, CAS# 8016-31-7, natural, *Levisticum officinale* Koch

Odor: @ 100%. Brown, slightly brothy, green, woody, vegetable-like and celerylike.

Taste: @ 1 ppm. Earthy, green, herbal and celerylike.

Taste: @ 2 ppm. Green, celerylike, herbal and celerylike.

Possible applications: The brown, celery-like notes of this essential oil make it a welcome addition to savory flavors like soup stock, hydrolyzed vegetable protein, soy sauce, chicken broth, meat and mushroom flavors. It might also be considered for walnut and pecan flavors.

► **Biolandes**; [www.biolandes.com](http://www.biolandes.com)

## Litsea absolute, 60%

Source: Biolandes

FEMA# 3846, CAS# 68855-99-2, natural, *Litsea cubeba* Pers.

Odor: @ 100%. Sweet, oily, slightly cooling, fruity and citruslike.

Taste: @ 10 ppm. Fruity, citruslike, lemonlike and slightly bitter.

Taste: @ 20 ppm. Fresh, citruslike, lemonlike, oily and slightly bitter.

Possible applications: The high citral content of this absolute makes it a natural choice for use in lemon and lime flavors.

Its fresh, fruity notes will add interest in other citrus flavors like grapefruit, bergamot, orange and mandarin.

► **Biolandes**; [www.biolandes.com](http://www.biolandes.com)

## Methyl thioacetate, natural

Source: Natural Advantage

FEMA# 3876, CAS# 1534-08-3

Natural occurrence: Boiled beef, beer, whiskey, wine, fish oil, onion, melon, pineapple, strawberry and pork liver.

Odor: @ 1%. Sulfurous, cooked vegetablelike, cabbage, cruciferous, fermented, eggy, meaty and savory.

Taste: @ 1 ppm. Meaty, eggy, sulfurous, cruciferous and over-ripe fruitlike.

Taste: @ 2 ppm. Fermented vegetablelike, cruciferous, over-ripe fruitlike, eggy, cooked onionlike and slightly coffeelike.

Possible applications: When used at very low levels, this odiferous chemical will add ripe notes to fruit flavors including pineapple, strawberry and cantaloupe. Otherwise, it will be most useful in cooked, vegetable flavors like onion,

cauliflower, broccoli and cabbage. Sauerkraut and kimchee are good applications, and other areas where it should be considered are cooked egg, cheeses like brie and Cheddar, mushroom and roasted meat.

► **Natural Advantage**; [www.natural-advantage.net](http://www.natural-advantage.net)

## β-Damascenone, natural, 1% in ethanol

Source: Excellentia

FEMA# 3420, CAS# 23696-85-7, natural

Natural occurrence: Apple, brandy, grape, plum, raspberry, rum, strawberry, tobacco, wine, whiskey and valerian root.

Odor: @ 1%. Woody, sweet, brown, dried fruit and tobacco-like.

Taste: @ 2 ppm. Sweet, fruity, slightly brown and raisinlike.

Taste: @ 5 ppm. Sweet, tobacco-like, raisin/prunelike, brown and "dark."

Possible applications: The brown, fruity notes of this lovely material will enhance most dried fruit flavors like raisin, date, fig and prune as well as fresh fruits such as black cherry, blackberry, red and black raspberries, purple grape, apple, pear and strawberry. Brown liquor flavors, e.g., whiskey, rum and brandy, also will benefit, as will red wine. And of course, it will fit nicely into tobacco flavors.

► **Excellentia**; [www.excellentiaint.com](http://www.excellentiaint.com)

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