



Flavorcon Special Edition: Organoleptic Characteristics of Flavor Materials

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Flavorcon Panelists

- Judith Michalski
- Cyndie Lipka, Senior Flavorist, Bell Flavors & Fragrances
- Gerard Mosciano, Consulting Flavor Chemist
- Robert Pan, Senior Flavorist, Bell Flavors & Fragrances
- Deborah Barber, Senior Scientist, Kraft Foods
- Christine Daley, President and Owner, Aroma Link LLC
- Alpha Roman, Senior Flavor Chemist, FFS
- Mike Fasano, Director of Vanilla Tech, David Michael & Co.

This month's column features the assessments presented during a live *Flavorcon* (www.flavorcon.com) session held on November 18 in Atlantic City, New Jersey. Normally, only common descriptors are shown for each material. For this issue, however, all remarks have been included to show the full range of the panelists' perceptions. **Common descriptors are highlighted in bold.** Products are shown in order of evaluation from mildest to strongest in character.

Cyclotene butyrate

Source: Penta Manufacturing
FEMA# 4648, CAS# 68227-51-0
Not yet found in nature.

Odor: @ 1%. Slightly **brown**, **sweet**, maple, lovage, licorice, **celery**, soy sauce, dirty, slightly cheesy, **caramel**, nut skins, dried fruit, slightly green, walnut and **nutty**.

Taste: @ 20 ppm. Mild, slightly maple, licorice, **astringent**, celery, lovage, **nut skins**, **sweet**, brown, slightly fruity, cheesy, fatty, walnut aftertaste, creamy mouthfeel, maple, caramel aftertaste, balsamic, butter, popcorn, creamy, cream cheese and **nutty**.

Possible applications: Comments about where this material could be used were mostly in brown flavors, namely **maple**, **caramel**, brown sugar, **nut skin notes**, **walnut**, **pecan**, **soy sauce**, red miso, chocolate, **raisin**, coffee, **celery**, **lovage**, prune and as part of a baked note complex.

►Penta Manufacturing; www.pentamfg.com

Methyl-Z-5-octenoate (FEMA name: methyl *cis*-5-octenoate)

Source: Chemical Sources Association
FEMA# 4165, CAS# 41654-15-3

Natural occurrence: Indian mango, pineapple and snake fruit.

Odor: @ 1%. Harsh, **waxy**, **green**, **fruity**, apple, pineapple, fatty, slightly floral, vegetable, fresh, oily, sweet, floral, peely, **tropical**, melon rind, cheesy, musty, catty, burnt and pear.

Taste: @ 2 ppm. **Green**, **waxy**, slightly bitter, leafy, **vegetable**, lettuce, celery, melon, green tea, **sweet**, floral, **fruity**, **creamy**, pear, apple, green banana, coconut flesh, coconut meat, tropical, mango, melon rind and slightly sour.

Possible applications: Suggestions for the use of this product were in Italian cheese flavors like Parmesan and Asiago, fat replacers, apricot, peach, olive oil, **apple**, **pear**, celery, **green tea**, **pineapple**, fruit enhancers, tropical fruits, **mango**, **melon**, guava, mushroom, lychee, tomato, endive, honeydew melon, cucumber, cilantro, banana, coconut and **papaya**.

►Chemical Sources Association; www.chemicalsources.org

Valerian root essential oil

Source: Elixens
FEMA# 3100, CAS# 8008-88-6, natural, *Valeriana officinalis* L.
Odor: @ 1%. **Camphoraceous**, **woody**, green, **earthy**, slightly cheesy, sweaty, black **walnut**, aromatic, shoe polish, nut, oily, ginger, minty, eucalyptus, moldy, **musty**, slightly floral, brown, menthol, medicinal, musky and herbal.

Taste: @ 1 ppm. Camphor, **woody**, green, herbal, dirty, **astringent**, oily, walnut, drying, minty, **musty**, **brown**, powdery, **musty**, vanilla, **floral**, nutty, dried fruit, cedar, earthy, musky and perfumey.

Possible applications: A wide range of flavor types were proposed for this essential oil's use: **walnut**, ginger, **vanilla**, tea, mouthwash, chocolate, maple, tomato paste, Chartreuse, blue cheese, mints, blueberry, tobacco, carrot, browns, dried fruit, dark cherry and herbal tea.

►Elixens; www.elixens.com

Isodihydro lavandulal (synonym: isopropyl methyl hexenal; FEMA name: 2-isopropyl-5-methyl-2-hexenal)

Source: Bedoukian Research
FEMA# 3406, CAS# 35158-25-9
Odor: @ 1%. Cooling, camphoraceous, **floral**, green, bathroom cleaner, dirty, brown undertone, **woody**, cedar, sawdust, soapy (*Irish Spring*), tobacco, dry, nutshell, slightly ginger, bamboo shoots, water chestnut, musty, **powdery**, herbal, orange beverage powder, perfumey and lavender.

Taste: @ 0.5 ppm. Malty, **brown**, bite, body, musty, cocoa, **woody**, flour, doughy, dry, **chocolate**, floral, apricot, **floral**, **blueberry**, chili pepper, sweet potato, honey, herbal, green, piney, orange beverage powder, fruity, grape and musk.

Possible applications: This is another material where a very wide range of flavors was recommended; **chocolate**, malt, **honey**, **blueberry**, violet, citrus, **ginger ale**, herbal, **whiskey**, chili pepper, sweet potato, **cocoa**, wood, tobacco, nut shell, dark rum, wine, tomato and dark berries.

► **Bedoukian Research**; www.bedoukian.com

4,5-Dimethyl-2-isobutyl-3-thiazoline

Source: Chemical Sources Association

FEMA# 3621, CAS# 65894-83-9

Natural occurrence: Cooked beef and yeast extract.

Odor: @ 1%. **Fatty**, savory, cracklings (rendered pork fat bits), **sulfurous**, gassy, **brown**, green, tropical, slightly **alliaceous**, gasoline, smoky, bacon, toasted, bread crust, chocolate, **coffee**, **savory**, **meaty**, meat char, **roasted**, sulfurol, burnt rubber and fried oil.

Taste: @ 0.5 ppm. Fried, **fatty**, pork, brown, **savory**, roast chicken, cracklings, **oily**, burnt, eggy, bread, corn chips coffee, condensed milk, roasted meat, **bacon**, chocolate, **cocoa**, **meaty**, vinyl plastic, rubber, burnt, alliaceus, corn chips and fried oil.

Possible applications: As to be expected, most of the flavor suggestions for this material were savory and/or brown; gravy, coffee, **meat**, taco, spice, red meat, cruciferous vegetables like cabbage and brussels sprouts, chocolate, **coffee**, fried

notes in fat replacers, BBQ, chipotle, **roast meat** (beef, pork, chicken, etc.), bacon, fat drippings, roasted nuts, condensed milk and roasted tomato.

► **Chemical Sources Association**; www.chemicalsources.org

Diallyl disulfide, natural

Source: Axxence

FEMA# 2808, CAS# 2179-57-9, natural

Natural occurrence: Cabbage, onion and garlic.

Odor: @ 1%. **Green onion**, **fresh**, **metallic**, bright, **garlic**, sharp, **alliaceous**, slightly brown, truffle, cabbage, brussels sprouts, sulfur, savory and meaty.

Taste: @ 1 ppm. Metallic, **garlic**, **onion**, **savory**, vegetable, tropical, **alliaceous**, leek, truffle, cabbage, brussels sprouts, sulfur, meaty, brown, **fresh**, sweet and green with a bite.

Possible applications: The panel recognized that this material will be very helpful in alliaceus flavor applications, namely **onion**, **garlic**, chives, leek and shallots, and the **savory** flavors using them, including shrimp scampi, **meat** and **seasoning blends**. Another area mentioned where diallyl disulfide can enlarge the sulfur complex and add fresh notes are **vegetable** flavors, especially the crucifers, wasabi, **cabbage**, kimchee, mustard and brussels sprouts. Other flavors suggested for its use are sour cream and **tropical fruits**, including durian, berries and truffles.

► **Axxence**; www.axxence.de

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