Organoleptic Characteristics of Flavor Materials

Gerard Mosciano is joined by Wayne Polero, senior flavorist, INNOVA Inc.; Judith Michalski, chief creative flavorist, Silesia Flavors; Carl Holmgren, chief creative flavorist, director of flavor development, Brooklyn by Perfetti Ltd.; and Douglas Young, senior creative flavorist, Dragoco, in the organoleptic evaluations presented here.

Editor’s Note—This is a series of articles reporting on reviews of flavor materials. Mosciano is the originator of this service feature and leader of the teams that have been contributing to this column for more than ten years. The first article in this series (Perfumer & Flavorist, Volume 14, November/December 1989, page 47) described the background and rationale for these reviews.

Address correspondence to Gerard Mosciano, 4646 Hickory Court, Zionsville, IN 46077.

Suppliers of most materials found in this report can be located in Allured’s Flavor & Fragrance Materials published by Allured Publishing Corporation, 362 South Schmale Road, Carol Stream, IL 60188-2787 USA, telephone 630/653-2155, fax 630/653-2192.

All evaluation solutions were diluted with ethyl alcohol unless otherwise stated. Natural occurrences were from the Leffingwell Database.

Zestorial (2,8-Epithio-p-menthane)
CAS# 68398-18-5, Artificial, Nature Identical
Odor: @ 1.0%. Sulphurous with grapefruit-like note. It has green vegetative and minty tropical nuances of passion fruit and papaya as well as peach and apricot.
Taste: from 50 to 1 PPM. Sulphurous with juicy fruity notes. It has tropical nuances of passion fruit, pineapple and mango. It imparts a grapefruit citrus note. The sulphurous note also imparts an Asafetida and vegetative nuance.
Potential Applications: Grapefruit top notes, tropical notes for passion fruit, mango, papaya, pineapple and Durnian. It would also contribute nuances to black currant, apricot and peach as well as sulphurous nuance to tomato.

Methyl Citronellate
FEMA # 3361, CAS# 2270-60-9, Artificial, Nature Identical
Natural Occurrence: Colytrix Tetrogana.
Odor: @ 1.0%. Sweet, cherry pit, marzipan and coumarinic. It has a slight almond nutty and heliotropine-like vanilla nuance.
Taste: @ 3.5-10 PPM. Powdery, bitter almond cherry pits-like with coumarinic and fruity nuances.
Potential Applications: Almond, cherry pit, vanilla, coumarin substitutes, marzipan, honey and raspberry.

Coffee Concentrate #50
Supplier: Danisco Cultor
CAS# 84650-00-0, Natural
Natural Occurrence: Coffee.
Odor: @ 100%. Roasted coffee with burnt and ashy beany nuances. It has a hint of cocoa/chocolate with a mild oily and caramellc note on dry out.
Taste: @ 0.2-1.0%. Roasted espresso coffee with burnt and ashy nuances, slightly bitter and astringent with some roasted savory soy and beef-like nuances.
Potential Applications: Italian roasted coffee, roast savory as well as cocoa/chocolate nuances.

Propyl Heptanoate
Supplier: Aldrich
FEMA# 2948, CAS# 7778-87-2, Artificial, Nature Identical
Natural Occurrence: Apple and rum.
Odor: @ 1.0%. Sweet, ripe, fruity apple, pear, pineapple, grape
and strawberry notes. It imparts a slightly fermented cognac nuance and has juicy tutti frutti and juicy fruit-like nuances.

**Taste:** @ 5-15 PPM. Sweet, waxy, fruity pineapple, pear, apple and citrus notes with a slight green grassy nuance.

**Potential Applications:** Pineapple, apple, pear, white grape, apricot, whiskey and cognac.

### Methyl Valerate

**Supplier:** Aldrich  
**FEMA#** 2752, CAS# 624-24-8, Artificial, Nature Identical

**Natural Occurrence:** Apple, coffee, honey, kiwi, melon, papaya, pineapple, strawberry, tea and wine.

**Odor:** @ 1.0%. Sweet, tutti frutti, juicy bubble gum-like with a sweaty nuance. It lends a sweet estry, syrupy fruity background.

**Taste:** @ 5-20 PPM. Sweet, ripe, fruity with sweaty dairy and cheesy nuances.

**Potential Applications:** Tutti frutti, apple, pineapple, strawberry, grape, bubble gum, ripe fruity notes and dairy and cheese nuances.

### Heptyl Formate

**Supplier:** Aldrich  
**FEMA#** 2552, CAS# 2349-13-5, Artificial, Nature Identical

**Natural Occurrence:** Kumquat.

**Odor:** @ 1.0%. Green, waxy, floral, herbaceous, with a slight vegetative cucumber and unripe fruity nuance.

**Taste:** @ 5-10 PPM. Fatty, waxy, oily, slight floral with a vegetative nuance. It has a slight Oenanthate under note.

**Potential Applications:** Apple, plum, melon, grape, cucumber, wine flavors, coconut, cream nuances.

### Undecanal

**Supplier:** Aldrich  
**FEMA#** 3092, CAS# 112-44-7, Artificial, Nature Identical

**Natural Occurrence:** Caviar, cooked beef, chicken and lamb, pork, coriander leaf, cucumber, fish, grapefruit and lemon.

**Odor:** @ 1.0%. Intensely soapy, aldehydic, waxy and slightly effervescent orange citrus-like with a watermelon, pineapple and cilantro background.

**Taste:** @ 5-20 PPM. Waxy, aldehydic, soapy with a citrus note and slight laundry detergent nuance.

**Potential Applications:** Citrus orange, herbal nuances, chicken and pork fat, watermelon and tropical fruity nuances.

### Pyroligneous Acid

**Supplier:** Aldrich  
**FEMA#** 2967, CAS# 8030-97-5, Artificial, Nature Identical

**Odor:** @ 1.0% PG. Smoky, woody/casky, slightly phenolic with a bacon and smoked salmon fattiness.

**Taste:** @ 5-30 PPM. Sweet hickory smokey, with burnt and charred woody notes, smoked meaty and bacon-like.

**Potential Applications:** Bacon, ham and other smoked meats, barbecue-sauce notes, smoke flavors, rum, tobacco, cheese nuances.

### Propyl Iso Butyrate

**Supplier:** Aldrich  
**FEMA#** 2936, CAS# 644-49-5, Artificial, Nature Identical

**Natural Occurrence:** Apple, honey, hop oil and olives.

**Odor:** @ 1.0%. Sweet, estry, ripe fruity, with tropical and juicy notes. It has melon, berry and red fruit nuances.

**Taste:** @ 5-15 PPM. Sweet, fruity, with ripe tropical, tutti frutti and citrus melon nuances.

**Potential Applications:** Orange and tangerine juicy notes, tropical fruits such as mango and guava, pineapple, juicy fruit and tutti frutti nuances, grape, cherry and rum.

### p-Methoxy Cinnamaldehyde

**Supplier:** Aldrich  
**FEMA#** 3567, CAS# 1963-36-6, Artificial, Nature Identical

**Natural Occurrence:** Baked potato, basil and tarragon.

**Odor:** @ 0.5%. (Limited solubility in ethyl) Spicy cinnamon, sweet with a rich pleasant cherry candy note, vanilla and slightly smoky.

**Taste:** @ 3-20 PPM. Cherry flesh, sweet, with a cinnamic dry out, slightly aromatic.

**Potential Applications:** Cherry, red licorice, fruit punch, cinnamon, spice blends, vanilla, tobacco nuances, honey and maple.

### Quinoline

**Supplier:** Aldrich  
**FEMA#** 3470, CAS# 91-22-5, Artificial, Nature Identical

**Natural Occurrence:** Burley tobacco, cocoa,
coffee, cooked rice and dried bonito.

**Odor:**  @ 1.0%. Medicinal, musty, tobacco with a pyridine and leather nuance.

**Taste:**  @ 2-10 PPM. Earthy, musty, nutty, coumarinic with a chemical nuance.

**Potential Applications:** Fish and seafood in general, shrimp, lobster, cocoa, potato, coffee, hazelnut and cherry pit nuances.

### Methyl Nonanoate

**Supplier:** Aldrich

**FEMA#** 2724, **CAS#** 1931-84-6, Artificial, Nature Identical

**Natural Occurrence:** Apple, butter, grape, hop oil, orris, pineapple, strawberry, tobacco and wine.

**Odor:**  @ 10%. Sweet, fruity, pear-like, waxy, winey, with a slight tropical nuance.

**Taste:**  @ 1-10 PPM. Winey, waxy, green celery and pear, with an unripe fruit nuance.

**Potential Applications:** Unripe fruit, such as apple, pear, coconut, celery, grape and pineapple. Wine nuances.

### Myristic Acid

**Supplier:** Aldrich

**FEMA#** 2764, **CAS#** 544-63-8, Artificial, Nature Identical

**Natural Occurrence:** Blue cheese, burley tobacco, coconut, cooked beef and chicken, fish, rum, Swiss cheese and wine.

**Odor:**  @ 10%. Faint, waxy and fatty with a hint of pineapple and citrus peel.

**Taste:**  @ 10-50 PPM. Waxy, fatty, soapy, creamy, cheesy, with a good mouth-feel.

**Potential Applications:** Dairy flavors such as creams, cheeses and butter, fat replacers and savory nuances.

### Hexyl-trans-2-Butenoate

**Supplier:** Aldrich

**FEMA#** 3354, **CAS#** 19089-92-0, Artificial, Nature Identical

**Natural Occurrence:** Cherimoya.

**Odor:**  @ 10%. Sweet, fruity green with apple and pear characters. It has vegetative nuances of celery and radish. A slight tropical note of pineapple.

**Taste:**  @ 10-25 PPM. Green, sweet pear with vegetative nuances of radish, potato and mushroom.

**Potential Applications:** Pear, apple, pineapple, melon, green strawberry and vegetative nuances for mushroom, radish and potato.