



# Organoleptic Characteristics of Flavor Materials

Gerard Mosciano

Gerard Mosciano is joined by Judith Michalski, chief flavorist, Edlong Flavors; Carl Holmgren, consulting flavor chemist; William Jaggard, Bell Flavors; and Douglas Young, principal flavorist, Symrise, in the organoleptic evaluations presented here. Natural occurrence information is from Leffingwell & Associates.

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The 2006 Chemical Sources Association (CSA) Suppliers' Round Table was held at FONA International, Geneva, Illinois. The 12,000-square-foot FONA center was built by president and CEO Joseph Slawek in part to house FONA'S Flavor 101, Savory 201 and Beverage 201 flavor education programs. In addition, it is an integral part of one of the most modern and up-to-date facilities built to house international offices, flavor creation, flavor applications and FONA's ever expanding flavor manufacturing requirements on its 23-acre campus.

The 110 attendees were able to evaluate and sample over 160 aromatic chemicals (both natural and artificial), botanical extractives and other natural materials, as well as evaluate finished products flavored with them.

The presenters were: Advanced Biotech, Bedoukian, Bell, Berjé, Biolandes, Cargill Flavor Systems, Danisco, Flavor Materials International, Fontarome Chemicals, International Flavors & Fragrances, MCI Miritz Citrus Ingredients LLC, Moore Ingredients, Charkrit/Oxford, SAFISIS USA, Polarome International, SAFC, Thwaites, Inc./Lionel Hitchen Ltd., Treatt USA, Vigon International/Givaudan and Wen International.

The following are but a few of the flavor ingredients presented.



The Moore Ingredients table at the CSA Round Table

## Evaluations

### Anisyl Acetone Natural

Source: Advanced Biotech, Inc.  
FEMA# 2672, CAS# 104-20-1

Natural occurrence: Extracts of aloe wood.

Odor: Neat. Sweet, jammy fruity, red berry, raspberry, black cherry, plumlike with seedy and floral nuances.

Taste: @ from 1–10 PPM. Rich berry, fruity, jammy, pulpy cherry, raspberry with woody notes.

Possible applications: Raspberry, black cherry, tropical nuances, seedy nuances, blueberry, blackberry, strawberry and cranberry.

► **Advanced Biotech, Inc.**; tel: 1-973-357-0577;  
[www.adv-bio.net](http://www.adv-bio.net)



### **Benzodihydropyrone Natural (synonyms: Tonkalide; 2,3-Dihydro Coumarin)**

Source: Bell Flavors & Fragrances, Inc.

FEMA# 2381, CAS# 119-84-6

Natural occurrence: Sweet clover and deertongue.

Odor: @ 1.0%. Creamy, coumarinlike, benzyl sweet and almondlike, floral and powdery with a slight metallic nuance.

Taste: @ from 1–5 PPM. Sweet, creamy, cherry almond and coumarinic.

Possible applications: Cherry, vanilla, coconut, baked goods, chocolate, coffee, bourbon whiskey, caramel, strawberry, tobacco flavors and mushroom nuances.

► **Bell Flavors & Fragrances, Inc.;**

tel: 1-847-291-8300; [www.bellff.com](http://www.bellff.com)

### **2,5-Dimethyl-3(2H)-Furanone Natural**

Source: Charkit Chemical Corp.

FEMA# 4101, CAS# 14400-67-0

Natural occurrence: Feyoa fruit, coffee, passion fruit juice, mango, wild rice.

Odor: @ 5.0%. Sweet, brown, caramel, toasted and roasted, slightly buttery and maplelike with hazelnut and cocoa nuances.

Taste: @ 25 PPM. Sweet fruity strawberry, apricot and peach with brown caramel and brown sugar notes and a scalded creamy nuance.

Possible applications: Cooked butter, strawberry, peach, apricot, hazelnut, cocoa, brown sugar, pecan, caramel apple, toffee, coffee, tropical fruit nuances.

► **Charkit Chemical Corp.;** tel: 1-203-665-3400;

[www.charkit.com](http://www.charkit.com)

### **Grapefruit Sulfur Isolate Natural and Organic (#02-028-06)**

Source: Moore Ingredients

Odor: @ 1.0%. Sulfurous 1-p-menthene-8-thiol-like, tropical, fresh, citrus orange with a slightly bitter citrus and catty methionol nuance, metallic pineapple and dried fruit.

Taste: @ from 2.5–5.0 PPM. 5% sugar + 0.10% CA. Sulfurous, juicy citrus grapefruit, slightly bitter, metallic with a pineapplelike nuance.

Possible applications: Canned pineapple, grapefruit, orange, durian and other tropical nuances, cassis, potato, guava, mangosteen.

► **Moore Ingredients;** tel: 1-513-881-7144;

[www.moorelab.com](http://www.moorelab.com)



### **4-Hexen-3-one**

Source: Treatt USA

FEMA# 3352, CAS# 2479-21-4,

Nature identical

Natural occurrence: Cooked chicken.

Odor: @ 1.0%. Pungent horseradish mustardlike, wasabi, ethyl vinyl ketone, seared fatty, hazelnutlike with vinegar and rumlike nuances.



Taste: @ 5 PPM. Pungent mustard, pepper, horseradishlike, rum, cooked onion, roasted and biting with tropical nuances.

Possible applications: Horseradish, orange, pepper, rum, coffee top notes, vegetable notes, chicken, onion, toasted peppers, nutty and tropical nuances.

► **Treatt USA;** tel: 1-863-668-9500;

[www.treatt.com](http://www.treatt.com)

### **N-(4-Hydroxy-3-Methoxy)-8-Methyl-6-Nonenamide 94% (synonym: Capsaicin)**

Source: Fontarome Chemical Inc.

FEMA# 3404, CAS# 404-86-4, Nature identical

Natural occurrence: Various capsicum pepper varieties.

Odor: @ 1.0%. Dry, slight woody and irritating.

Taste: @ 0.1 PPM. Burning sensation in the back of the throat that builds in the aftertaste.

Possible applications: Heat for cinnamon confections such as Red Hots and Jawbreakers, chili and other condiments, ginger ale beverages, Bloody Marys and bitterness blockers.

► **Fontarome Chemical Inc.;**

tel: 1-414-744-3993;

[www.fontaromechemical.com](http://www.fontaromechemical.com)



### **Massoia SOR, Acetone Extract, Natural**

Source: Thwaites, Inc.

Odor: @ 1.0%. Sweet warm, coconutlike, creamy, coumarinic, woody with a perfumey herbaceous undertone.

Taste: @ 1.0 PPM. Mild coconut, woody, creamy lactonic with a floral nuance.

Possible applications: Coconut, cream, cheese and milk nuances, tropical nuances, vanilla and green curry nuances, peach, Irish cream flavors.

► **Thwaites, Inc.;** tel: 1-781-935-8461;

[www.thwaitesinc.com](http://www.thwaitesinc.com)

### **Methionyl Butyrate (synonym: 3-(Methylthio)-Propyl Butyrate)**

Source: Treatt USA

FEMA# 4160, CAS# 16630-60-7

No natural occurrence found.

Odor: @ 1.0%. Cheesy, moldy, fresh pineapple, potato and tomatolike with fruity apple and tropical notes with cultured creamy nuances.

Taste: @ 1 PPM. Woody, sulfurous, tropical fruity aftertaste, vegetative mushroom, potato, hard boiled egg with buttery,

creamy and cheesy dairy nuances.  
*Possible applications:* Mushroom, tropical top notes, pineapple, potato, egg, creamy cultured nuances.

► **Treatt USA**; tel: 1-863-668-9500;  
[www.treatt.com](http://www.treatt.com)

### Methyl 10-Undecenoate Natural (synonym: Methyl Undecylenate)

*Source:* Cargill Flavor Systems  
 FEMA# 4253, CAS# 111-81-9  
 No natural occurrence found.

*Odor:* @ 1.0%. Fatty and waxy, intensely soapy, winey and leathery cognaclike with fruity pineapple and apple notes, milky creamy dairy, citrus lemon, angelica woody on dry out.

*Taste:* @ 0.5–2.5 PPM. Waxy, soapy, cheesy dairy, fatty tallowlike with citrus and green vegetative and angelica rootlike nuances.

*Possible applications:* Wine, grape, apricot, peach, cheese and milk flavors, cream and fatty meat nuances, gin, mint blends and pineapple.

► **Cargill Flavor Systems**;  
 tel: 1-513-539-7373;  
[www.cargillflavorsystems.com](http://www.cargillflavorsystems.com)

### Prenyl Iso Butyrate

*Source:* Bedoukian Research Inc.  
 FEMA# 4206, CAS# 76649-23-5, Nature identical

*Natural occurrence:* Roham chamomile.  
*Odor:* @ 1.0%. Sweet estry, heavy fruity plum and pear with a green waxy nuance.

*Taste:* @ from 0.5–5 PPM. Estry fruity, plum with a slight balsamic and green waxy nuance.

*Possible applications:* Plum, wine, strawberry and other berry flavors, grape, cherry, blueberry, cranberry, tea, banana, apple, pear, apricot and peach.

► **Bedoukian Research Inc.**;  
 tel: 1-203-830-4000;  
[www.bedoukian.com](http://www.bedoukian.com)

### Soft Ginger Extract Chinese Alcoholic Extract, Natural

*Source:* Thwaites, Inc.

*Odor:* @ 1.0%. Warm spicy ginger, impacting, woody, slight peppery with a hint of fruitiness, slight heat and citrus nuances.

*Taste:* @ from 5–10 PPM. Warm spicy

ginger, woody, rootylike with a lingering tingle and slight heat in the aftertaste.

*Possible applications:* Ginger ale, ginger beer, spice blends and Asian seasonings, confections and baked goods.

► **Thwaites, Inc.**; tel: 1-781-935-8461;  
[www.thwaitesinc.com](http://www.thwaitesinc.com)

### St. John's Bread Extract Unroasted, Natural and Organic

*Source:* Moore Ingredients  
 FEMA# 2243, CAS# 9000-40-2

*Odor:* Neat. Sweet, caramel brown, grainy and cocoalike with sugary nuances.

*Taste:* @ from 0.20–0.25%. Sweet brown, caramel, maple with honey nuances and a slight astringent, slightly nutty with a cheddar cheeselike nuance.

*Possible applications:* Nut flavors, cocoa, maple, molasses, caramel, fruit depth notes, toffee, butterscotch, vanilla and condensed milks.

► **Moore Ingredients**; tel: 1-513-881-7144;  
[www.moorelab.com](http://www.moorelab.com)

### Tamarind Extract Natural

*Source:* Vigon International

*Odor:* Neat. Fruity, dried fruity, apple and cherry, slightly medicinal and reminiscent of valerian with a slight floral nuance.

*Taste:* @ from 0.1–0.5%. Mildly acidic, applesauce and cherrylike, slightly dry nutty, brown with a cocoalike nuance.

*Possible applications:* Peanut, cocoa, cherry and dried fruit, molasses and cooked fruit.

► **Vigon International**; tel: 1-570-476-6300;  
[www.vigoninternational.com](http://www.vigoninternational.com)

### Tangerine Oil, 10 Fold, Dancy

*Source:* Thwaites, Inc.

*Odor:* @ 1.0%. Sweet rich citrusy tangerine/orange character, tangy, fleshy and juicy with a slight marmalade peel and aldehydic note.

*Taste:* @ from 0.5–1.0 PPM. Strong, sweet citrusy tangerine, orange, mandarinlike with sinensal fleshy and juicy notes and a good mouthfeel.

*Possible applications:* Orange, orange toners, tangerine and mandarin.

► **Thwaites, Inc.**; tel: 1-781-935-8461;  
[www.thwaitesinc.com](http://www.thwaitesinc.com)

