



Organoleptic Characteristics of Flavor Materials*

Focus on citrus

Gerard Mosciano

Gerard Mosciano is joined by Judith Michalski, chief flavorist, Edlong Flavors; Carl Holmgren, consulting flavor chemist; and Douglas Young, principal flavorist, Symrise, in the organoleptic evaluations presented here.

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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; www.perfumerflavorist.com.

Blood Orange

Source: Lionel Hitchen (Essential Oils) Ltd.
Natural

Odor: @ 1.0 percent. Sweet aldehydic, rich juicy pulpy orange.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Rich full-bodied orange, waxy, pulpy and meaty with a lingering sweetness.

Possible applications: Orange juice body, citrus punches and tropical nuances.

► **Lionel Hitchen (Essential Oils) Ltd.**; tel: 44-1962-760815; www.lheo.co.uk

Citrazest Orange Freshly FTNF

Source: Frutarom
Natural

Odor: @ 1.0 percent.
Fresh citrus orange, waxy aldehydic and slightly green.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Fresh juicy orange with waxy and green notes.

Possible applications: Citrus orange, tangerine and peach nuances.

► **Frutarom**; tel: 201-861-9500; www.frutarom.com

Citreatt Lemon #6122

Source: Treatt USA
Natural

Odor: @ 1.0 percent. Impacting juicy lemon, fresh and tart with a green distilled lime nuance and an aldehydic citral undertone.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA.

Tangy juicy lemon lime with a citral aldehydic and a fresh peely nuance.

Possible applications: Citrus lemon and citrus blends for beverage and punch applications, cola flavors.

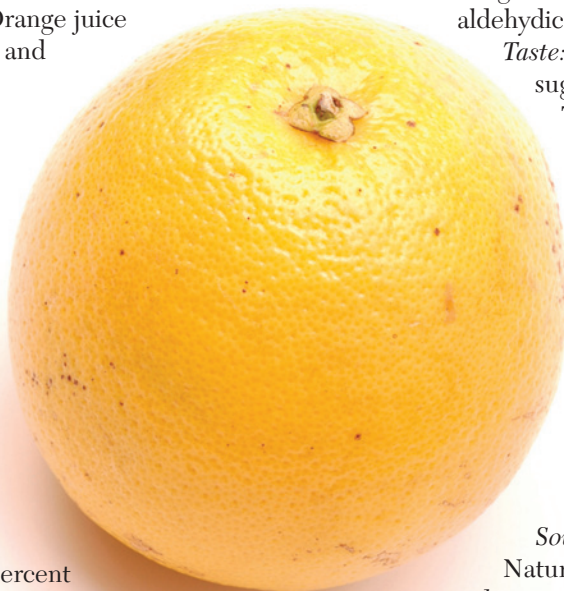
► **Treatt USA**; tel: 863-668-9500; www.treatt.com

Citreatt Orange #3111

Source: Treatt USA
Natural

Odor: @ 1.0 percent. Peely, woody, waxy, dry aldehydic orange with fresh green, slightly floral and powdery nuances.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA.



*Natural occurrence information from Leffingwell

Orange waxy, aldehydic with fresh and slight floral nuances.

Possible applications: General orange applications, tutti frutti flavors.

► **Trealt USA**; tel: 863-668-9500; www.trealt.com

Decanal 90 percent Ex. Orange

Source: Polarome International
Natural

FEMA# 2362, CAS# 112-31-2

Natural occurrence: Avocado, coriander seed, grape, grapefruit, guava, lemon, lime, mandarin, orange, tomato, potato and rice.

Odor: @ 1.0 percent. Sweet clean orange, citruslike, waxy and aldehydic, woody, candylike with a floral and cilantro stem nuance.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Sweet citrus body, orange, waxy and slightly woody with a cilantro stem and geranium floral nuance.

Possible applications: Reconstituting orange, lemon, mandarin and other citrus notes.

► **Polarome International**; tel: 201-333-8700; www.polarome.com

Grapefruit Aldehydes

Source: MCI Miritz Citrus Ingredients
Natural

Odor: @1.0 percent. Musty sinensal citruslike, bitter and waxy, orangelike with a methyl nonyl acetaldehyde-like nuance.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Fresh, juicy citrus, waxy orange and grapefruit-like with a slight spicy nuance.

Possible applications: Orange, grapefruit and citrus punches.

► **MCI Miritz Citrus Ingredients**; tel: 845-988-9920; www.miritz.de

Grapefruit Sulfur Isolate

Source: Moore Ingredients
FEMA# 2530, Natural and organic

Odor: @ 1.0 percent. Sulfurous 1-p-menthene-8-thiol-like, tropical, fresh citrus orange and grapefruitlike with a slight bitter citrus and catty methional nuance.

Taste: @ 5 PPM in 5 percent sugar and 0.1 percent CA. Sulfurous, juicy citrus grapefruit, slightly bitter, metallic with a pineapple-like nuance.

Possible applications: Pineapple, grapefruit, orange, durian, mango and other tropical nuances.

► **Moore Ingredients**; tel: 513-881-7144; www.moorelab.com

Lemon Isolate

Source: Moore Ingredients
Natural and organic

Odor: Neat. Sweet lemon, juicy, citral and aldehydic with a sharp fresh pulpy note and a slightly woody orange petitigrain nuance.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Juicy lemon, lemonade-like with acidic, fruity lime and a candy lemon drop nuance.

Possible applications: Lemon beverages, confections, citrus punches.

► **Moore Ingredients**; tel: 513-881-7144; www.moorelab.com

Lemon Oil Five Fold G34/T

Source: F.D. Copeland & Sons Ltd.
Natural

Odor: @ 1.0 percent. Fresh citrus lemon, candy citral, waxy aldehydic with a nice juicy sharpness.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Sweet citrus, pulpy juicy lemon, citral-like with a lingering fresh green nuance.

Possible applications: General lemon applications, confections and beverages.



► **F.D. Copeland & Sons Ltd.**; tel: 44-870-460-8101; www.fdcopeland.com

Lemon Oil HC Free, Spring Crop

Source: MCI Miritz Citrus Ingredients Natural

Odor: @ 1.0 percent. Juicy citrus lemon, citral aldehydic with a slightly floral rosy and lime nuance.

Taste: @ 5 PPM in 5 percent sugar and 0.1 percent CA. Fresh citrus lemon body, citral aldehydic with a lime richness of depth and a slightly floral oily nuance.

Possible applications: Lemon, lime, citrus enhancers, gin and cola flavors.

► **MCI Miritz Citrus Ingredients**; tel: 845-988-9920; www.miritz.de

Lime HV

Source: Treatt USA Natural

Odor: @ 1.0 percent. Intense, high impacting fresh sweet juicy lime, citral with a distilled lime note, cool and refreshing with green juicy nuances.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Intense fresh tangy lime juice, citrus citral candy lime character with notes of West Indian lime.

Possible applications: Lemon, lime, cocktail mixes, carbonated clear beverages, cola beverages.

► **Treatt USA**; tel: 863-668-9500; www.treatt.com

Lime Persian HC Free

Source: MCI Miritz Citrus Ingredients Natural

Odor: @ 1.0 percent. Sharp, green key limelike, aldehydic but not citral-like, rich pulpy and fresh with a slight coumarin richness of depth.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Fresh squeezed tangy, citrus lemon and lime rickylime with a slight floral oolong tealike nuance.

Possible applications: Lemon and lime enhancers, gin flavors, cola beverages, citrus beverage enhancers.

► **MCI Miritz Citrus Ingredients**; tel: 845-988-9920; www.miritz.de

Neral Refined 94/95 percent

Source: Citrus & Allied

FEMA# 2303, CAS# 5392-40-5, Natural

Natural occurrence: Apricot, clary sage, ginger, grape, grapefruit, lemon, lime, mandarin, orange, raspberry, tamarind, tangerine, tea and tomato.

Odor: @ 1.0 percent. Characterizing lemonlike, distilled lime peel, intense aldehydic citruslike.

Taste: @ 5 PPM in 5 percent sugar and 0.1 percent CA. Characteristic lemon, peely, citrus, green floral juicy with woody and candy notes.

Possible applications: Lemon/lime citrus notes, ginger, tomato and other citrus reconstructions.

► **Citrus & Allied**; tel: 718-343-0030; www.citrusandallied.com

Nerol

Source: Advanced Biotech

FEMA# 2770, CAS# 106-25-2, Natural

Natural occurrence: Apricot, gin, grape, grape brandy, grapefruit, honey, lemon lime, mandarin, orange, raspberry and tamarind.

Odor: @ 2.0 percent. Rosy, slight citrus, terpy and floral, reminiscent of linalool oxide with aldehydic waxy and fruity nuances.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Rosy with citrus nuances, fruity pear with floral citronellal notes.

Possible applications: Fruit nuances for pear, apple, tea, citrus nuances.

► **Advanced Biotech**, tel: 973-357-0577; www.adv-bio.com

Nonanal 20 percent Ex. Orange

Source: Polarome International
FEMA# 2782,

CAS# 124-19-6, Natural
Natural occurrence:

Apple, avocado, black currant, cucumber, grapefruit, kumquat, lemon, lime, mandarin, orange, peach, spearmint.



Odor: @1.0 percent. Sweet waxy, orange citrus with oily fatty and melon skin nuances and a slightly lactonic nuance.

Taste: @ 2 PPM in 5 percent sugar and 0.1 percent CA. Aldehydic citrus orange body with waxy and oily melonlike nuances.

Possible applications: Orange and other citrus enhancers, peach and melon.

► **Polarome International**; tel: 201-333-8700; www.polarome.com

Octanal 90 percent Ex. Orange

Source: Polarome International

Natural

Natural occurrence: Avocado, beer, grapefruit, kumquat, lemon, lime, mandarin, orange, potato chips, roast filbert, tea and tomato.

Odor: @ 1.0 percent. Waxy, citrus orange and tangerine with blood orangelike aldehydic fatty nuances. Slightly metallic with hints of coconut and melon.

Taste: @ 5 PPM in 5 percent sugar and 0.1 percent CA. Citrus waxy, rich orange body, sweet with a slightly green vegetative nuance.

Possible applications: Orange and other citrus enhancers, melon and tomato.

► **Polarome International**; tel: 201-333-8700; www.polarome.com

Orange Terpeneless

Source: International Flavors & Fragrances (IFF)

Natural

Odor: @ 1.0 percent. Sweet, fresh juicy orange, slightly creamy and aldehydic.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Sweet, fresh juicy orange with milk candy and peely nuances and a character reminiscent of a Fanta beverage.

Possible applications: Orange juice enhancers, beverage flavors, citrus punches, tropical nuances.

► **IFF**; tel: 212-765-5500; www.iff.com

Orange Top Aroma FTNF

Source: Frutarom

Natural

Odor: Neat. Impacting, acetal and ethyl vinyl ketonelike, green citrus with fresh juicy notes.

Taste: @ 5 PPM in 5 percent sugar and 0.1 percent CA. Impacting, green juicy citrus.

Possible applications: Fresh top notes for juice add back for orange and other citrus beverages.

► **Frutarom**; tel: 201-861-9500; www.frutarom.com

Orange Valencia HC Free

Source: MCI Miritz Citrus Ingredients

Natural

Odor: @ 1.0 percent. Sweet, juicy aldehydic orange with a rich pulpy body and a waxy and slight nerolilike nuance.

Taste: @ 5 PPM in 5 percent sugar and 0.1 percent CA. Rich, waxy orange body with a slight floral orange blossomlike nuance.

Possible applications: Marmalades, tangerine, orange confections, New Age orange beverages.

► **MCI Miritz Citrus Ingredients**; tel: 845-988-9920; www.miritz.de

Sinensals

Source: International Flavors & Fragrances (IFF)

Natural

Odor: @ 1.0 percent. Orange, citrus, fresh and juicy with a waxy grapefruit and slight methyl nonyl acetelaldehydelike nuance.

Taste: @ 10 PPM in 5 percent sugar and 0.1 percent CA. Sweet juicy orange, pulpy and fresh, citrus grapefruit with a slight floral nuance.

Possible applications: Orange, grapefruit, other citrus nuances and tropical notes.

► **IFF**; tel: 212-765-5500; www.iff.com

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