Terpene Sensory Training

TRUE TERPENES

The True Terpenes Sensory Training Kit is designed to teach you how to explore cannabis flavor and aroma like a connsoisseur.

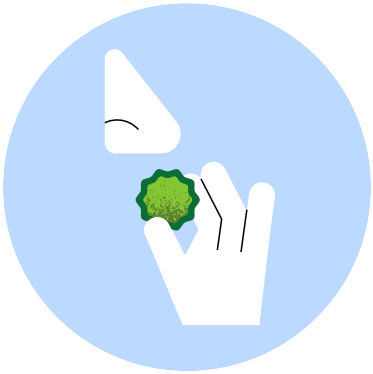
In this booklet, you'll find the tools and vocabulary to get started:

- Get to know top cannabis terpenes
- Perform sensory analysis
- Identify the aroma compounds that contribute to the aromatic depth of the plant's many distinct strains
- Guide consumers and yourself on the incredibly rewarding journey of shopping with your nose

Sensory analysis is one of the most valuable tools we have. No piece of equipment is as sensitive to aroma as the human nose or as adept at recalling a flavor note as the human brain. Here's our method for performing sensory analysis.

Sensory analysis of flower

First, snap the flower in your fingers and allow some volatiles to disperse. Waft (or inhale closely if the scent is faint) until you have a sense of the front, middle, and back notes.



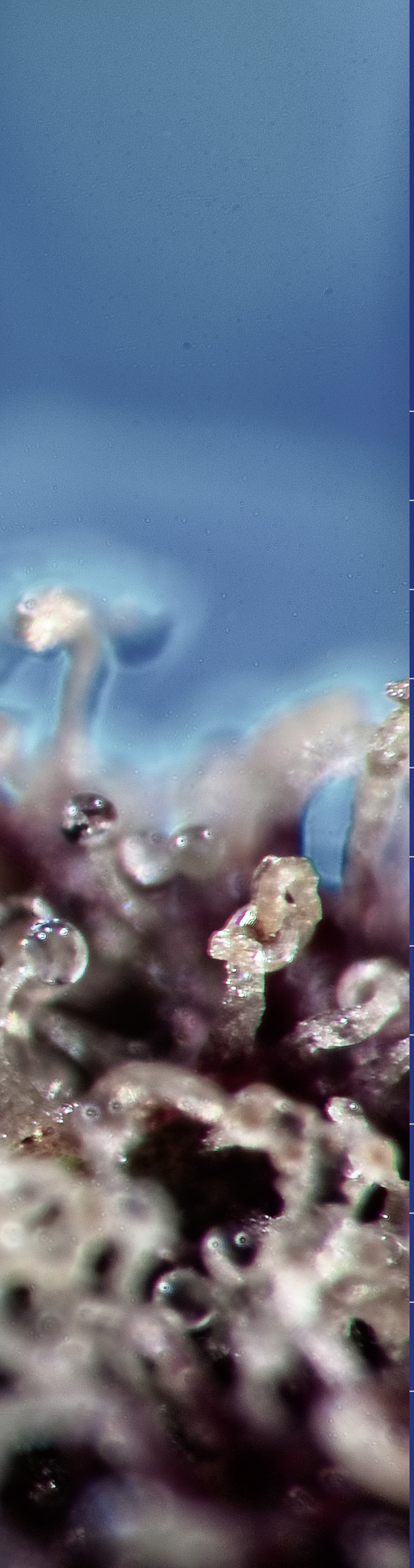
Not sure if something lines up? Get a real-life sample and compare. Grab a lemon from your fridge or some grass from outside or step down into the basement for some mustiness. With a little practice, you'll build your library of sense memory and power of recall.

Terpene Blends

When performing sensory analysis on aromatic liquids like terpenes, don't smell directly out of the bottle. Instead, dip or drip a small amount of liquid on a test strip. Waft the strip from various distances until you've gotten a complete picture, then label the strip with the name of the sample.

Using the aroma wheel

With the aroma fresh on your mind, check the aroma wheel. Start from the inner ring, where you'll find the most general categories like Fruity, Earthy, or Floral. Work your way out and look for the elements that line up closest to your experience. Keep the sample close by in case you need to take another waft to narrow in on the aroma.



Terpene Isolates

- Δ-Limonene
- Linalool
- Terpinolene
- Myrcene
- β-Caryophyllene
- Eugenol
- Humulene
- α-Pinene
- β-Pinene
- Ocimene
- Valencene
- Eucalyptol

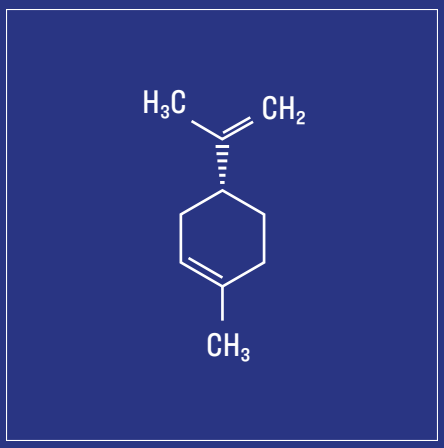
D-Limonene

Pronunciation
Li-muh-neen

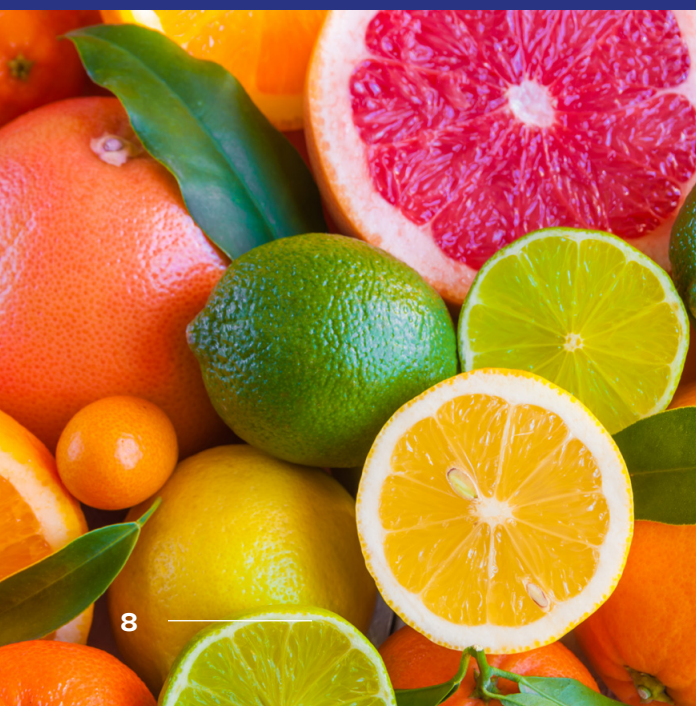
Boiling Point
176°C

Type of Terpene
Monoterpene

Flash Point
50°C



IUPAC: 1-Methyl-4-(prop-1-en-2-yl) cyclohex-1-ene



AROMATIC PROFILE

Limonene (also known as d-limonene) is instantly recognizable due to its distinct, citrus-forward flavor profile and uplifting effects. Well-developed sweet and sour notes reveal a spectrum of organic citrus fruit aromas, capturing hints of everything from fresh-squeezed juice to the oils in the rind.

Strains that typically feature prominent limonene flavors include Super Lemon Haze, Tahoe, Wedding Cake, and Mendicino Purps.

PLANT SOURCES

Limonene isolate can be naturally sourced from many citrus fruits, including grapefruit, lime, lemon, and orange, occurring most abundantly in the rind. It is especially plentiful in oranges, where it comprises around 97% of all the rind's essential oils.

POTENTIAL EFFECTS

Limonene is believed to have uplifting effects that boost mood and energy. It can also enhance the absorption of other terpenes and cannabinoids.

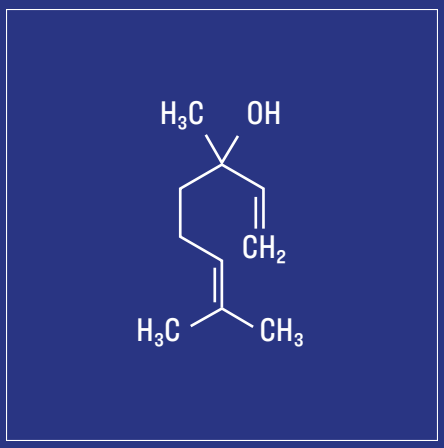
Linalool

Pronunciation
Li-nal-oh-awl

Boiling Point
199°C

Type of Terpene
Monoterpene

Flash Point
55°C



IUPAC: 3,7-Dimethylocta-1,6-dien-3-ol

AROMATIC PROFILE

Linalool's interplay of lavender, spice, and green apple evokes the soothing sensation of browsing through a candle store and taking in all the delicate scents. Notes of cinnamon and black pepper complement its prominent floral character, while the secondary fruity notes hew closer to the soft sweetness of candy flavoring or soap fragrance than to the acidity of fresh-squeezed juice.

Linalool can be found in strains such as UK Cheese, Chemdawg, and Skywalker OG.

PLANT SOURCES

Linalool derives its name from the linaloe tree, but it can also be extracted from a variety of plants in the mint (Lamiaceae), laurel (Lauraceae), and citrus fruit (Rutaceae) families.

POTENTIAL EFFECTS

Much like lavender, linalool possesses soothing properties that can help promote sleep and relaxation. It can be used in combination with terpenes like myrcene to activate synergistic effects.

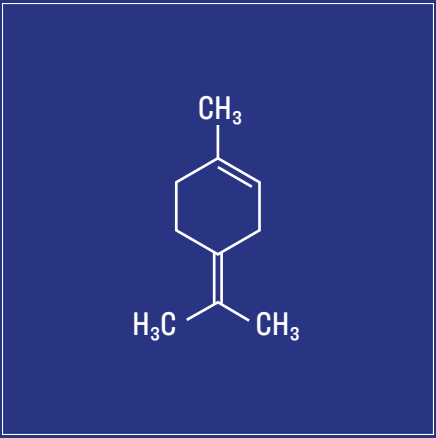
Terpinolene

Pronunciation
Ter-pin-o-lene

Boiling Point
186°C

Type of Terpene
Monoterpene

Flash Point
64°C



IUPAC: 1-Methyl-4-(propan-2-ylidene) cyclohex-1-ene

AROMATIC PROFILE

Terpinolene, with its pine-forward, phenolic character reminiscent of strong cleaning solution, is known as one of the most intensely aromatic terpenes. Bittersweet notes of unripe citrus provide a pleasant contrast and further punch up the flavors, contributing to terpinolene's energizing effects.

Terpinolene is prominent in strains such as Durban Poison, Jack Herer, and Super Lemon Haze.

PLANT SOURCES

Most commercial terpinolene extract is sourced from trees, especially fir, pine, and tea trees, but it can also be found in spices like cumin and nutmeg, fruits like apples, and flowering plants like lilac..

POTENTIAL EFFECTS

Many people turn to Terpinolene-rich strains for an energizing yet calm clarity that supports focus and productivity.

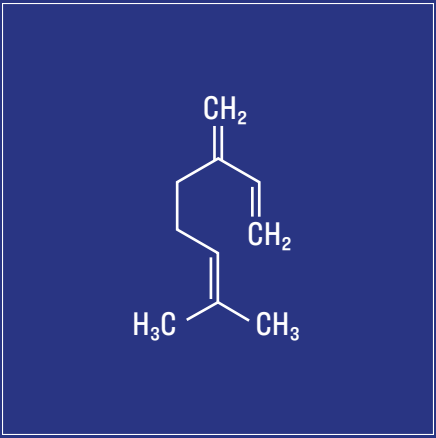
Myrcene

Pronunciation
Myr-cene

Boiling Point
168°C

Type of Terpene
Monoterpene

Flash Point
39°C



IUPAC: 7-Methyl-3-methylideneocta-1,6-diene

AROMATIC PROFILE

Layering notes of hops, cloves, and tropical fruits on a deceptively simple base of earth and citrus tones, myrcene's full aromatic profile is one-of-a-kind.

The most abundant cannabis terpene, Myrcene's unique combination of sour, herbaceous, and slightly sweet notes make an unmistakable contribution to characteristic cannabis aroma profiles. Tucked away in its top notes are hints of mint, near-ripe mango, and even fennel, demonstrating the aromatic diversity and complexity of the terpene.

Strains with high myrcene content include Phantom OG, White Widow, Himalayan Gold, and Pure Kush.

PLANT SOURCES

Myrcene is found in hops and mangoes, as well as herbs like thyme, lemongrass, basil, and bay laurel leaves.

POTENTIAL EFFECTS

Myrcene, especially in the form of lemongrass tea, has been used as a folk sedative and pain reliever for centuries. Strains high in Myrcene are thought to promote relaxation and sleep.

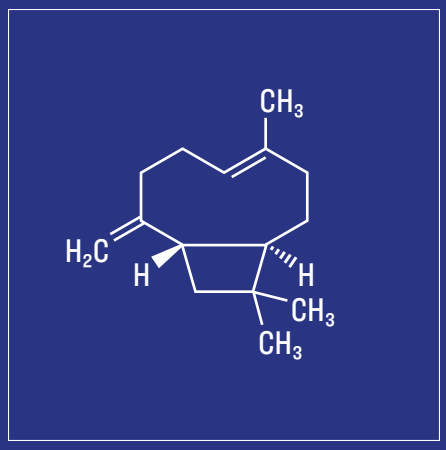
B-Caryophyllene

Pronunciation
Be-ta Car-y-o-phyl-lene

Boiling Point
264°C

Type of Terpene
Sesquiterpene

Flash Point
123.33°C



IUPAC: 1-Methyl-4-(propan-2-ylidene) cyclohex-1-ene

AROMATIC PROFILE

Beta-caryophyllene evokes the inside of a spice cabinet, weaving together aromas of mixed spice and aged wood with a subtly savory sweetness. Strong notes of milled peppercorns open to warm, comforting suggestions of cinnamon and incense. Shades of roasted nuts and ginger add to the terpene's inviting aroma.

Strains rich in beta-caryophyllene include Hash Plant and Cookies & Cream.

PLANT SOURCES

Beta-caryophyllene is plentiful in dark spices such as black pepper, black caraway, and cloves, but it can also be found in aromatics like hops, basil, and oregano.

POTENTIAL EFFECTS

Beta-caryophyllene's large chemical structure gives it the notable property of binding to CB2 receptors in the body, making it the first known terpene to interact with the endocannabinoid system–much like true cannabinoids. This allows it to synergize with CBD and CBG, giving it uniquely effective analgesic and anti-inflammatory properties. Strains high in caryophyllene are said to promote relaxation and euphoria.

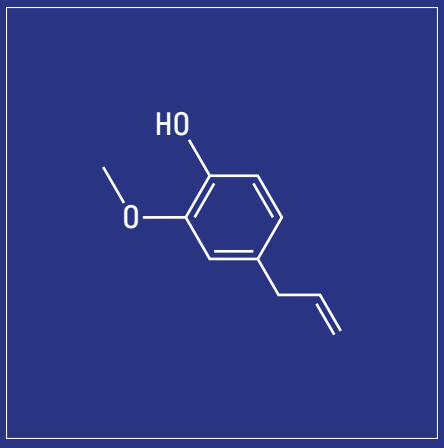
Eugenol

Pronunciation
Eu-ge-nol

Boiling Point
254°C

Type of Terpene
Monoterpene

Flash Point
104°C



IUPAC: 2-Methoxy-4-(prop-2-en-1-yl)phenol

AROMATIC PROFILE

If you've ever opened an oven to check on Christmas cookies, you'll be familiar with eugenol's key aromatic components. Clove-forward with hints of nutmeg, anise, and orange pekoe, a touch of allspice adds a gentle and welcome bite to the mix, while strong base notes of sandalwood round the profile out with a bit of floral musk.

While Eugenol is found in many cannabis strains, few cannabis strains actually contain significant amounts of this terpenoid. However, that doesn't mean it doesn't have an impact on the aroma and effects profile. Strains that feature Eugenol include OG Kush, Headband, and Afghani.

PLANT SOURCES

Eugenol is best known as the main component of clove oil, but it can also be sourced from cinnamon, nutmeg, Japanese star anise, and wormwood

POTENTIAL EFFECTS

Eugenol has a long history of therapeutic use for its properties as a digestive aid, a mild stimulant, and especially an oral antiseptic and topical anesthetic. It continues to be sold in the form of clove oil to soothe toothaches and heal mouth abscesses. Strains that contain Eugenol may be sought out to support creativity and focus.

Humulene

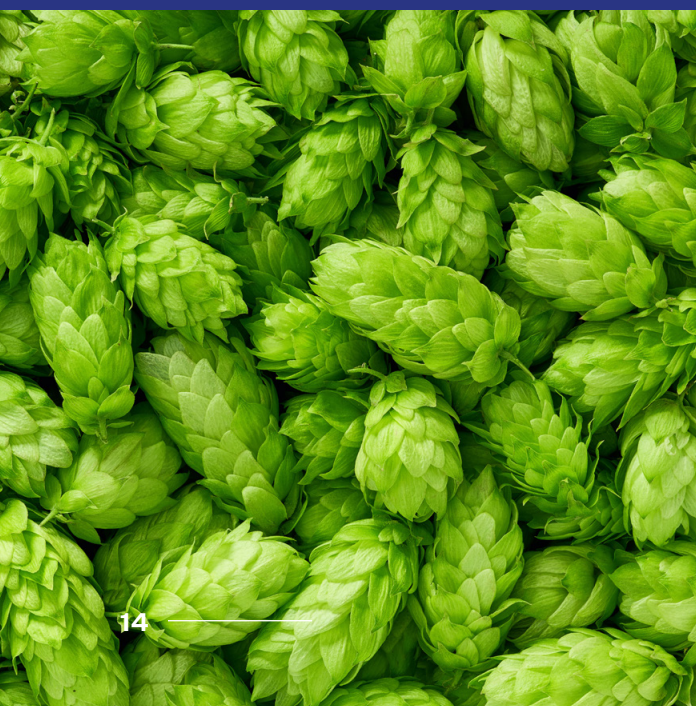
Pronunciation
Hu-mu-lene

Boiling Point
107°C

Type of Terpene
Sesquiterpene

Flash Point
106°C

IUPAC: (1E,4E,8E)-2,6,6,9-Tetramethylcycloundeca-1,4-8-triene



AROMATIC PROFILE

Fans of hoppy beer will immediately recognize humulene's distinct aromatic mix of toasted grains, aged barrel, and yeasty batter. (In fact, this is the very terpene that gives hops—Humulus lupulus, the closest cousin of cannabis—their unmistakable scent.) Mildly bittersweet herbal notes cut through the brewhouse overtones as a breeze of lightly musty air creeps in at the tail end of the aroma.

Humulene can be found in strains such as Sherbert, Bubba Kush, Death Star, and Headband.

PLANT SOURCES

Though most often associated with hops, humulene can also be extracted from sage, Japanese spicebush, ginseng, spearmint, ginger, and Chinese laurel.

POTENTIAL EFFECTS

Strains high in Humulene may be used to promote calm and rest. Humulene is known to be effective in topical uses as an insecticide, anti-inflammatory, antibacterial, and antifungal agent.

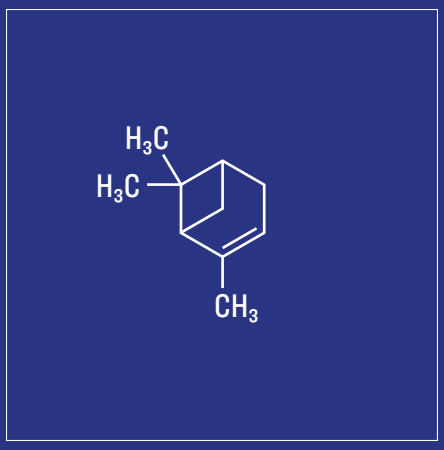
Alpha Pinene

Pronunciation
Al-pha Pahy-neen

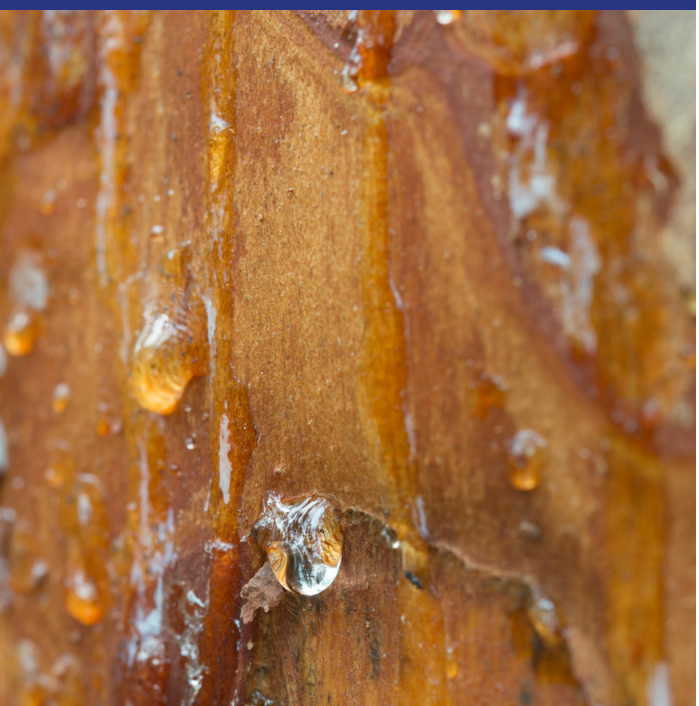
Boiling Point
156.85 ± 4.00°C

Type of Terpene
Monoterpene

Flash Point
33°C



IUPAC: (1S,5S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene ((−)-α-Pinene)



AROMATIC PROFILE

A strongly herbal, soapy, and pine-forward terpene, alpha-pinene feels like a blast of boreal air. The fresh, natural notes of eucalyptus and cedar—complemented by touches of braising herbs and raw sap—are counterbalanced by mild, but pronounced, touches of piney cleaning solution.

Strains such as Blue Dream and OG Kush are known for their high alpha-pinene content.

PLANT SOURCES

As the most plentiful terpene on the planet, alpha-pinene is found naturally in numerous plant species (including cannabis). It is most often isolated from conifer trees, pine needles, and herbs like dill, rosemary, and sage.

POTENTIAL EFFECTS

Like a walk in the forest, alpha-pinene is known for its uplifting, focus-promoting effects. Alpha-pinene has shown promise for chronic pain management due to its anti-inflammatory effects, and research is ongoing into its potential as a bronchodilator. Its mood- and creativity-boosting properties are also a topic of research.

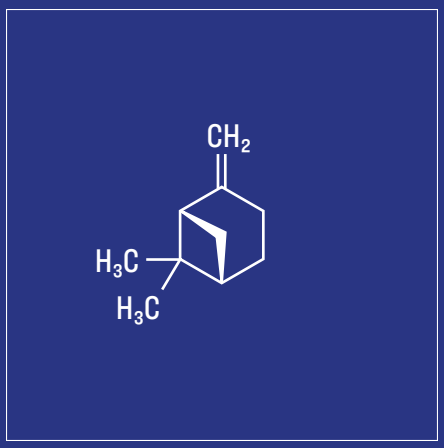
Beta Pinene

Pronunciation
Be-ta Pahy-neen

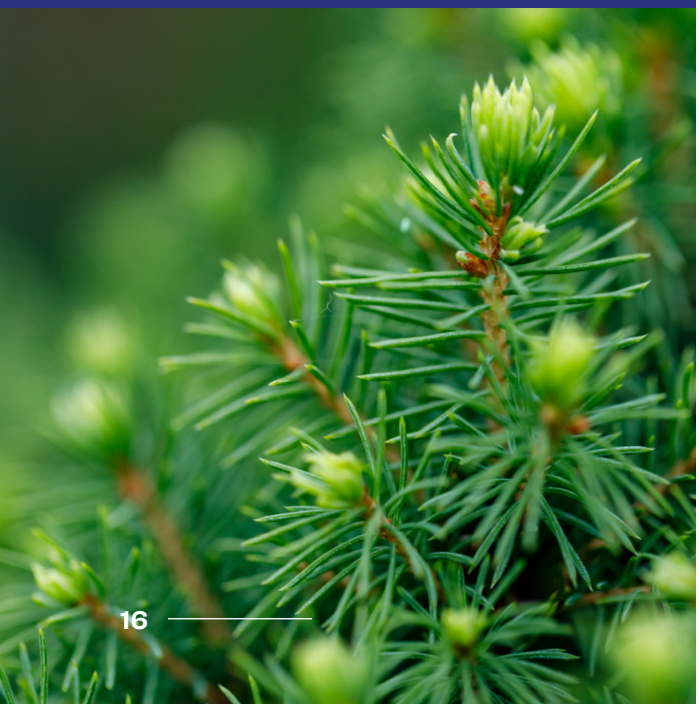
Boiling Point
167°C

Type of Terpene
Monoterpene

Flash Point
36°C



IUPAC: 6,6-Dimethyl-2-methylidenebicyclo [3.1.1]heptane Pin-2(10)-ene



AROMATIC PROFILE

Compared to alpha-pinene, which is its isomer, or chemical mirror image, beta-pinene offers a different side of the same flavor profile, evoking far stronger notes of spearmint and menthol—and less earth and spice. What differentiates beta-pinene from many of the other terpenes is that its leading minty, evergreen fragrances remain steady in the nose, giving it a simple and straightforward freshness.

Like its chemical twin alpha-pinene, beta-pinene can be found in strains like Blue Dream and OG Kush..

PLANT SOURCES

Beta-pinene is sourced from the same plants as alpha-pinene, especially conifer and pine trees.

POTENTIAL EFFECTS

Much like alpha-pinene, beta-pinene is thought to improve alertness, focus, and mental clarity. It has also been shown to have effectiveness as an anti-inflammatory and possible bronchodilator.

Ocimene

Pronunciation
Oc-i-mene

Boiling Point
100°C

Type of Terpene
Monoterpene

Flash Point
46.67°C

AROMATIC PROFILE

By itself, ocimene is one of the most obscure and understated terpenes, but it is one of the pillars of what makes cannabis distinct. In fact, it is an irreplaceable part of the plant's immune mechanism. It has a multifaceted aroma, leading with citrus, herb, and wood while hitting floral and vegetable notes.

Himalayan Gold, Dutch Treat, and Green Crack are some strains featuring high ocimene content.

PLANT SOURCES

Ocimene is prevalent in many plants with complex, exotic aromas. They include hops, kumquat, sour orange, parsley, and lavender.

POTENTIAL EFFECTS

Ocimene's stimulating, uplifting effects may be used to promote creativity and focus. Ocimene's unique antiviral properties make it a subject of intense research. It has also been shown to increase the beneficial anti-inflammatory and antioxidant properties of other terpenes through the entourage effect.

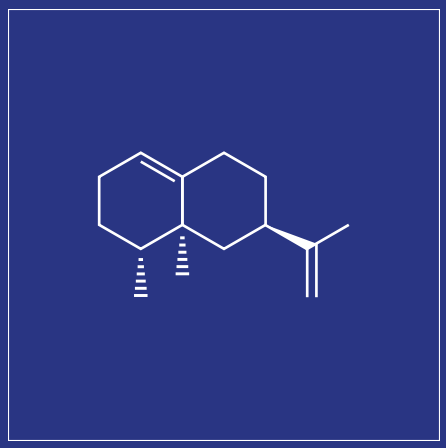
Valencene

Pronunciation
Va-len-cene

Boiling Point
123°C

Type of Terpene
Sesquiterpene

Flash Point
123°C



AROMATIC PROFILE

Valencene takes its name from the Valencia orange, a small, slightly bitter cultivar that originated in Southern California and is known as one of the best juicing oranges. Valencene is citrus-forward and relatively sweet, but a jab of herbaceous woodiness gives it a unique bitter citrus quality that aligns it more with grapefruit than store-bought navel orange.

Valencene features prominently in strains such as Agent Orange, Orange Crush, Jack Frost, and Durban Poison.

PLANT SOURCES

Valencene can be extracted from most citrus fruits but is most abundant in semi-bitter varieties like Valencia oranges and grapefruits.

POTENTIAL EFFECTS

Uplifiting and sweet, Valencene is said to boost mood and mental clarity. Topically, it's most effective as an insecticide and skin protectant.

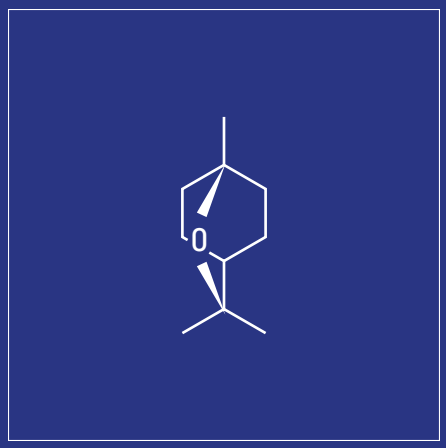
Eucalyptol

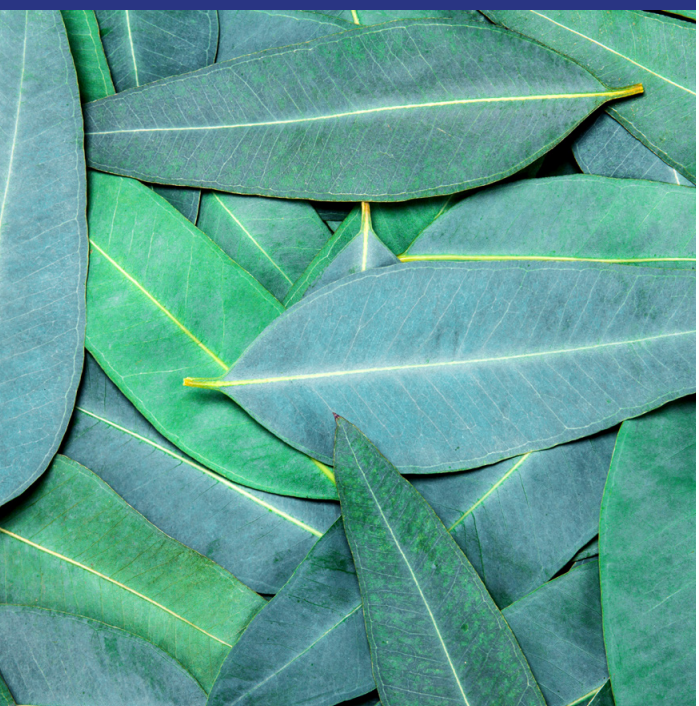
Pronunciation
Eu-ca-lyp-tol

Boiling Point
172°C

Type of Terpene
Monoterpene

Flash Point
172°C





AROMATIC PROFILE

The distinctly strong, relaxing scent of eucalyptus leaves comes from eucalyptol, one of the most easily identifiable terpenes. Partly spicy and partly minty, anyone who's used products like mouthwash or aromatic decongestants will be familiar with eucalyptol's herbaceous punch.

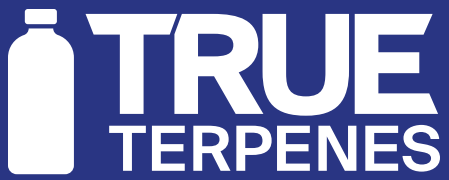
Strains with significant eucalyptol content include Super Silver Haze, GSC, and Bubba Kush.

PLANT SOURCES

Eucalyptol is most prominent among plants of the genus Eucalyptus, but it can also be sourced from camphor laurel, bay laurel leaves, and common sage.

POTENTIAL EFFECTS

The invigorating scent of Eucalyptol can help refresh and re-energize the body while also having a calming, soothing effect on the mind. The isolate eucalyptol is a potent bronchodilator, analgesic, and anti-inflammatory agent, lending it to its use in decongestants.



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