Ethyl Salicylate

In contrast to methyl salicylate, ethyl salicylate is softer and slightly balsamic; it integrates into a wide range of flavor categories.

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At first sight, ethyl salicylate, also sometimes known as ethyl 2-hydroxy benzoate (FEMA 2458, CAS# 118-61-6), seems the poor relation to methyl salicylate (FEMA 2745, CAS# 119-36-8). The relative volumes in which the two chemicals are used strongly reinforce that perception; the latter being the more popular. Both esters are found fairly widely in nature, so that does not explain the discrepancy.

In reality, much of the high volume of methyl salicylate used is simply a reflection of its being the key component in wintergreen, and consequently root beer, flavors. Further, considering the more subtle contribution of a wintergreen note to a wide range of non-wintergreen flavors, the dominance of methyl salicylate is much less obvious or justified.

Both chemicals are instantly recognizable as wintergreen but the methyl ester has a slightly harsh, phenolic undertone, which can intrude unpleasantly in many non-wintergreen flavors. In contrast, the ethyl ester is softer, slightly balsamic, and integrates rather more generously in a wide range of flavor categories, described as follows.

Berry Flavors

Concord grape: Concord grape flavors are fundamentally constructed around very high levels of anthranilates. Ethyl salicylate partners well with anthranilate esters and offers added complexity at around 200 ppm in flavors.

Blackcurrant: A modest wintergreen note contributes significantly to the authenticity of realistic blackcurrant flavors. 200 ppm is a good starting point and also adds to the perception of blackcurrant berry skins.

Blueberry: Blueberry flavors vary in style; consequently, the best use level of this ingredient can range from 50 ppm to 200 ppm, with higher levels giving something of a wild blueberry or bilberry character, again emphasizing the skin notes.

Strawberry: In a similar way wintergreen is often an important contributor to fresh strawberry flavors. Levels of addition depend on the profile that is desired. Wild strawberry flavors, especially those with a pronounced jasmine floral note, can accommodate the most. 150 ppm is an ideal starting point.

Raspberry: Ethyl salicylate blends into raspberry flavors much more harmoniously than methyl salicylate because key components in raspberry already exhibit a phenolic nuance, which methyl salicylate makes more intrusive. The ideal level of addition to raspberry flavors is 100 ppm.

Blackberry: 100 ppm of ethyl salicylate also works well in most styles of blackberry flavors, with a similar effect to that observed in raspberry flavors.

Cherry: 50 ppm is a good level of addition of ethyl salicylate to realistic cherry flavors but higher levels are interesting in more simplistic, tutti-frutti estery and bitter almond styles.

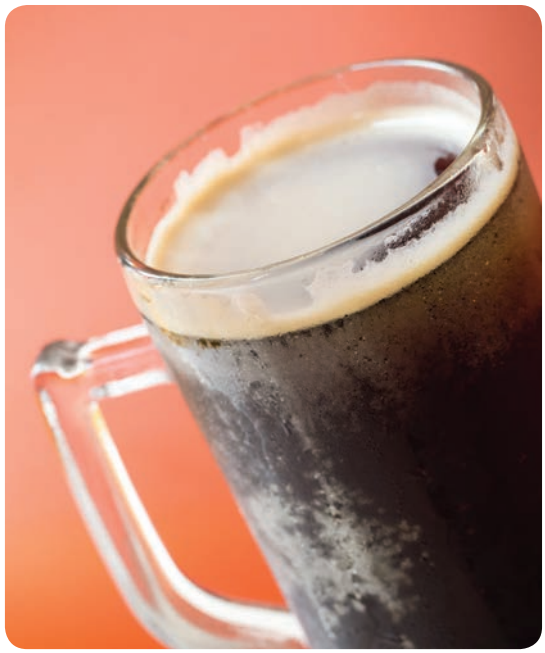
Other Fruit Flavors

Guava: The best use level for ethyl salicylate in guava flavors is 100 ppm. At this level, it complements the key methyl and ethyl cinnamate esters.

Papaya: 100 ppm is also an advantageous level in papaya flavors, exerting a similar function to guava.

Apricot: Ethyl salicylate is very effective at around 50 ppm in apricot flavors, enhancing complexity and depth.

Soursop: 40 ppm is a perfect level for this ingredient in soursop flavors, adding authenticity and lift.



Ethyl salicylate can help soften the flavor and add depth in root beer.

Peach: Lower levels of ~ 30 ppm ethyl salicylate work well in peach flavors and add a useful degree of extra realism to the profile.

Watermelon: Watermelon flavors are frequently fantasy-based and in this style of flavors, levels of addition around 30 ppm are effective. Only trace levels, starting at 10 ppm, are helpful in authentic style flavors.

Banana: Either methyl salicylate or ethyl salicylate can be used for good effects in realistic banana flavors because they accommodate phenolic notes quite readily. The ideal level of addition of ethyl salicylate is around 20 ppm.

Passion fruit: 20 ppm of ethyl salicylate is also useful in passion fruit flavors, adding depth and complexity.

Brown Flavors

Black tea: This elusive flavor is quite complex and the wintergreen note plays an important part in the overall profile. Ethyl salicylate performs distinctly better

than methyl salicylate at levels of around 200 ppm in tea flavors.

Caramel: Ideal levels of ethyl salicylate in caramel and similar flavors, such as butterscotch and brown sugar, are lower, at 100 ppm or less.

Chocolate and cocoa: Levels of ethyl salicylate vary with the character desired, so more cocoa-oriented flavors can benefit from 50 ppm, whereas milk chocolate flavors are better served by 10 ppm.

Vanilla bean: Authentic vanilla bean flavors only require the addition of around 20 ppm of ethyl salicylate to gain added authenticity.

Coffee: Only a trace of this ingredient is needed in coffee flavors, i.e., around 10 ppm, but the effect is still significant.

Alcoholic Drink Flavors

Rum: Achieving realism in spirit flavors is never easy, and many flavors err on the side of far too much simplicity. Ethyl salicylate is especially effective at enhancing complexity in rum flavors at around 40 ppm.

Brandy and cognac: The ideal level of use in brandy and cognac flavors is rather lower, in the region of 10 ppm, but the complexity-enhancing effect is similar.

Whisky: 10 ppm is also a good level to try in whisky flavors, adding a layer of complexity and realism to a flavor category than can often seem overpowered by fusel notes.

Floral Flavors

Violet: Some violet flavors taste as if they contain little beyond the obvious ionones and it can be difficult to find useful secondary characters to enhance rather than detract from the floral notes. Ethyl salicylate works well at levels in the range of 10 ppm.

Rose: Even more subtle notes are helpful in rose flavors, around 5 ppm, but at that level, ethyl salicylate does add to the overall floral character.

Other Flavors

Root beer: Even though most of the character of root beer and wintergreen flavors is usually derived mainly from methyl salicylate, ethyl salicylate can still play a useful role. It can either be used at 2,000 ppm to generate the main wintergreen note, or at around 200 ppm where its contribution is secondary but helps to soften the flavor and add subtle depth.

Peanut: Most nut flavors can benefit from a moderate addition of ethyl salicylate; this is especially true for peanut flavors, where 50 ppm is a good starting point.

Cheese: Again, many different styles of cheese flavor can be improved by the addition of a trace of this ingredient. It is especially effective in cheddar cheese flavors at around 30 ppm.

Lemon juice: Lastly, ethyl salicylate initially seems completely foreign to any citrus flavor—and in general, that conclusion is reasonable. However, there is one exception is used in styles of lemon juice flavor with high levels of jasmine notes, where ethyl salicylate can be useful at around 20 ppm.