α-Methylbenzyl acetate

This ingredient has multiple monikers and a similarly complex aroma character.

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α-Methylbenzyl acetate (FEMA# 2684, CAS# 93-92-5) may be a contender for the largest number of widely used synonyms amongst flavor chemicals. The most common synonym is methylphenylcarbinyl acetate. 1-Phenyl ethyl acetate, styrallyl acetate and gardenol are also frequently used in the trade.

This confusing profusion of nomenclature is matched by a similarly complex aroma character. The chemical is only found in nature in gardenia flowers and, indeed, the aroma profile bears more than a passing resemblance to gardenia. For a flavorist, the obvious initial impression is of rhubarb rather than gardenia. The dominant rhubarb note carries with it strong nuances of pleasant, fresh, green characters, together with hints of berries and bitter citrus rind. There are now many more modern, effective, green notes available for use in flavors, and it is tempting to feel that this ingredient has been superseded. In reality, the green note is very useful because it bears a resemblance to the distinctive character of *cis*-3-hexenal, a superb chemical that is somewhat restricted in use because of limited stability.

α-Methylbenzyl acetate is the cornerstone of virtually all rhubarb flavors, despite the fact that it's not found in rhubarb in nature. At much subtler levels, it's also extremely useful in a very wide range of other flavors.

Berry Flavors

Blackcurrant: This ingredient works surprisingly well in all styles of blackcurrant flavors, but is at its best in the more authentic types. Levels of use can vary, but 500 ppm adds freshness and realism.

Raspberry: The ideal level of use in raspberry flavors depends on the other ingredients, but 300 ppm is a good starting point, especially if it is used to add freshness and berry character in conjunction with α-damascone or damascenone.

Blackberry: As with raspberry flavors, levels of use can vary, but the optimum level is a little lower, around 200 ppm.

Loganberry: Very similar levels of use, in the region of 200 ppm, also work well in loganberry flavors.

Gooseberry: Two hundred ppm is also the ideal level of addition of this ingredient in gooseberry flavors, adding depth to a profile that is often dominated by very light aliphatic esters.

Redcurrant: This is not exactly a common flavor type, but it can be quite challenging to produce a realistic redcurrant flavor. This ingredient can be very helpful at around 100 ppm.

Blueberry: A level of 100 ppm also works very well in blueberry flavors and has the added virtue of providing welcome depth and complexity.

Strawberry: α-Methylbenzyl acetate is very widely used in strawberry flavors, but the best level of addition is quite low, in the region of 50 ppm.

Cherry: Low levels, 50 ppm and below, are also very helpful in cherry flavors, and work equally well in benzaldehyde-dominated flavors and more natural profiles.

Citrus Flavors

Grapefruit: A good level of use in a realistic grapefruit juice-style flavor is around 50 ppm. Higher levels, about 300 ppm, tend to shift the character more in the direction of grapefruit rind.

Lemon: This ingredient also works well in lemon flavors, but at much lower levels. A level of 10 ppm works well in juice-type flavors, and levels up to 200 ppm shift the profile more toward lemon peel.

Lime: Similar levels have comparable effects in lime flavors, but this ingredient works best in flavors having the character of expressed, rather than distilled, lime oil.

Orange: High levels of α-methylbenzyl acetate in orange flavors certainly give a very peely effect, but they can also

have the undesirable effect of pushing the profile toward grapefruit. Lower levels, around 50 ppm, are best.

Tropical Fruit Flavors

Passion fruit: α-Methylbenzyl acetate makes a perfect addition to passion fruit flavors at around 400 ppm.

Kiwi: Kiwi is an almost equally good fit, and a similar 400 ppm level of use is very effective.

Mango: Fifty ppm is the best level of addition for most types of modern mango flavors, adding a little extra freshness and depth.

Melon: This ingredient works well in all the different types of melon flavors, but is most effective in watermelon. A level of 20 ppm is ideal.

Pineapple: Only very subtle additions, 5–10 ppm, are sufficient to elevate the freshness and authenticity of pineapple flavors.

Papaya: Similar levels also have a modest beneficial effect in papaya flavors and add a degree of brightness.

Other Fruit Flavors

Rhubarb: This chemical can often dominate commercial rhubarb flavors, and levels of use up to 20,000 ppm in a flavor can be very pleasant and effective. Obviously, more realistic flavors can be made with much lower levels of α-methylbenzyl acetate, but care should be exercised because many consumers are more familiar with this chemical than they are with genuine rhubarb.

Plum: More modest additions of around 1,000 ppm are extremely useful in plum flavors, and add to a profile that can sometimes be a little nondescript.

Apple: The profile resemblance to *cis*-3-hexenal is also useful in apple flavors, especially when used in conjunction with *trans*-2-hexenal. High levels are sometimes used with pleasant results, but the best level in apple flavors is around 200 ppm.

Grape: α-Methylbenzyl acetate can be used effectively in both *Vitis vinifera* grape flavors (such as Muscat) and the more common Concord grape flavors. It is, however, more effective in Concord grape flavors. The best level of use is in the region of 200 ppm

Banana: Banana flavors can be overly simple and thin. Levels as low as 30 ppm can add complexity and depth.

Peach and apricot: Very subtle levels, in the region of 5 ppm, can be quite helpful in enhancing the skin notes of apricot and peach flavors.

Other Flavors

Ginger: The profile of freshly grated green ginger is hard to capture, and this ingredient fits in very well at 200 ppm in green ginger flavors.

Vanilla: Real vanilla beans have a subtle fruity character, rather resembling dried fruit, which can be very hard to capture. α-Methylbenzyl acetate can help in this aspect at 50 ppm in a vanilla bean flavor.

Chocolate: Similar levels, around 50 ppm, can also be very helpful in all styles of chocolate flavors.
