



2-Furyl methyl ketone

This predominantly caramel ingredient offers nutty and balsamic nuances.

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Most brown, caramel notes need to be used with care in flavors that do not have an obviously cooked character. Even at subtle levels, they can detract from the impression of freshness in other flavor categories. This is especially true in the case of fruit flavors. 2-Furyl methyl ketone (FEMA# 3163, CAS# 1192-62-7), also commonly known as 2-acetyl furan, works very well in a wide range of brown, nutty, fermented and savory profiles but it is also very helpful well outside these categories. The profile is predominantly caramel, but it also conveys subtle nutty and balsamic nuances. It is particularly useful in fruit flavors, and at modest levels of addition it serves to add realism and naturalness without taking away any of the desirable fresh character.

Several related chemicals are also useful in flavors, notably 2-acetyl-5-methylfuran (FEMA# 3609, CAS# 1193-79-9), 2-acetyl-3,5-dimethylfuran (FEMA# 4071, CAS# 22940-86-9) and 3-acetyl-2,5-dimethylfuran (FEMA# 3391, CAS# 10599-70-9). All of these ingredients are interesting, use choices being determined by cost and use considerations, but 2-furyl methyl ketone has by far the widest range of use.

The dose rates given below are the levels of 2-furyl methyl ketone to be used in flavors that are intended to be dosed at 0.05% in a ready-to-drink taster, beverage or bouillon.

Brown Flavor

Caramel: Above all 2-furyl methyl ketone has an excellent caramel profile, aromatic without being harsh at high levels. Two thousand ppm is probably near the optimal level of addition in caramel flavors, but even higher levels are possible.

Maple: This ingredient works well in traditional-style maple flavors at around



2,000 ppm. Similar, and possibly even higher, levels are very effective in flavors attempting to recreate the character of genuine maple syrup.

Honey: A level of 2,000 ppm is also very effective in honey flavors. This is particularly true when there is a dominant floral note.

Bread: Bread flavors can be quite challenging to recreate because they must combine subtlety and impact. This ingredient gives great impact and added realism at levels around 2,000 ppm.

Butterscotch: Butterscotch flavors have many points in common with caramel flavors and similar comments can be made about the use of this ingredient. A level of 2,000 ppm is once again a good place to start.

Licorice: Licorice flavors often need additional complexity and this component performs well at levels in the region of 1,500 ppm.

Malt: Malt flavors also benefit from relatively high levels of 2-furyl methyl ketone. A level of 1,500 ppm is a good starting point, but even higher levels can be used.

Brown sugar: A level of 1,500 ppm also works well in brown sugar flavors,

adding depth and authenticity. Higher levels are practical in molasses flavors.

Coffee: Coffee flavors can also accommodate widely different levels of addition, depending on the degree of roast. A level of 1,000 ppm is the best level for most coffee flavors but higher levels can be accommodated successfully in highly roasted styles.

Chocolate: In a similar way, chocolate flavors can benefit from a range of levels. A level of 100 ppm can work well in milk chocolate and white chocolate variants and 1,000 ppm will work well in dark chocolate and cocoa flavors.

Vanilla: This ingredient adds depth and realism to vanilla bean-style flavors at around 300 ppm.

Soy sauce: A level of 200 ppm is an ideal level of addition in flavors that aim to reproduce the elusive character of soy sauce.

Root beer: A level of 200 ppm gives subtle realism in root beer flavors and helps soften the dominant wintergreen notes.

Tea: 2-Furyl methyl ketone works better in black tea flavors than in green tea profiles. A level of 200 ppm is a good starting point.

Raisin: It should be possible to add significant levels of this chemical to raisin flavors but, oddly, the ideal level is relatively low, in the region of 100 ppm.

Nut Flavors

Hazelnut and praline: Levels of use can range from 500 ppm to 4,000 ppm in hazelnut and praline flavors. The higher levels within this range are generally more effective in praline profiles.

Peanut: A similar range of levels work well in peanut flavors, but 2,000 ppm is an effective compromise.

Walnut, almond and pistachio: 2-Furyl methyl ketone is also useful in walnut, almond and pistachio flavors. Somewhat lower levels are best at around 500 ppm.

Fermented Flavors

Whiskey: Whiskey flavors can easily seem too harsh, and this ingredient is a good softening addition. Levels can vary widely in whiskey and other spirit flavors, such as brandy and rum, but 1,000 ppm is reasonably optimal.

Dark beer: This chemical can make a contribution to all styles of beer flavors, but is most effective in those recreating a dark beer or stout character. Levels are relatively modest at around 100 ppm.

Wine: Similar levels, around 100 ppm, round out and add an impression of age and complexity to all styles of wine flavors.

Savory Flavors

Smoke: The most natural savory application of this ingredient is in smoke flavors. It has a highly effective softening function and adds significantly to depth and realism. Levels of use vary, but 1,000 ppm is effective.

Chicken: Out of all of the meat flavors, this chemical works best in chicken flavors. Levels vary dramatically, being higher in boiled than roasted and fried profiles, but 1,000 ppm is a good starting point.

Tomato: A level of about 500 ppm can be used to great effect in a range of tomato flavors, especially those with a tomato puree character. Lower levels are preferred in fresh tomato flavors.

Ham and pork: 2-Furyl methyl ketone works well in ham flavors, both as an important aspect of the smoke component and also as a useful component within the meat profile. Three hundred ppm is an ideal level in ham flavors. One hundred ppm is better in pork flavors.

Fried onions: Levels vary in onion flavor types, depending on the method of cooking, but 300 ppm is a good starting point.

Bacon: The contribution of this component in bacon flavors is a little lower, around 200 ppm, unless the profile is highly smoked.

Roast beef: Two hundred ppm also works well in roast beef flavors, as well as barbeque, steak and burger profiles.

Shrimp: Similar levels, in the region of 200 ppm, work well in a wide range of fish and seafood flavors, but are especially effective in shrimp flavors.

French fries: 2-Furyl methyl ketone only plays a minor role in french fry flavors, but it can be helpful at 100 ppm.

Fruit Flavors

Grape: This ingredient is especially well suited to all types of grape flavors. Levels of use can range between 20 ppm and 200 ppm depending on the effect desired.

Raspberry: Two hundred ppm also works well in raspberry flavors, with a notable increase in realism.

Cranberry: Similar, moderate levels, around 200 ppm are very effective in cranberry flavors.

Strawberry: Strawberry flavors are softened and rounded notably by 2-furyl methyl ketone at around 100 ppm.

Peach and apricot: Both these flavor categories are helped by levels in the region of 100 ppm.

Black currant: Black currant flavors can also benefit from around 100 ppm of this ingredient, adding realism and complexity.

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